XO-D50

SERVICE MANUAL

AEP Model
UK Model

- XO-D50 is composed following models. As for the service manual it is issued for each component model, then, please refer to it.

COMPONENT MODEL NAME FOR XO-D50

	AEP West Germany Italian	UK
TUNER	ST-D50L	ST-D50L
DECK AMPLIFER	DXA-D50	DXA-D50
TURNTABLE SYSTEM	————	PS-LX60P

ACCESSORY & PACKING MATERIAL

Part No.	Description
1-417-090-00	(IT)...TRANSFORMER, ANTENNA MATCHING
1-501-349-11	(AEP,UK,IT)...ANTENNA, LOOP
1-501-351-21	(IT)...ANTENNA, FEEDER
1-559-830-11	CORD (WITH CONNECTOR) 7P
3-701-630-00	BAG, POLYETHYLINE
3-701-806-03	(UK)...ADAPTOR, 45, (E)
3-769-938-11	(AEP,WG)...MANUAL, INSTRUCTION
3-769-938-41	(AEP,WG,IT)...MANUAL, INSTRUCTION
3-769-938-51	(UK)...MANUAL, INSTRUCTION
4-914-075-01	CUSHION (SP)
*4-924-014-01	(AEP,WG,IT)...INDIVIDUAL CARTON
*4-924-017-01	(UK)...INDIVIDUAL CARTON

IT: Italian
WG: West Germany

SPECIFICATIONS

Accessories supplied

RM-L510 Remote commander (1)
Sony SUM-3 (NS) batteries (2)
Flat cord with 5-pin connectors (1)
Flat cord with 7-pin connectors (1)
FM antenna (Ooly Italian model) (1)
AM antenna (1)
Antenna matching transformer (1) (Only Italian model)
Speaker cushions (1 set)

COMPACT Hi-Fi STEREO SYSTEM

SONY®

MICROFILM

9-953-116-11

Sony Corporation
Audio Group

English
88B0455-1
Printed in Japan
© 1988. 2
Published by A/V Engineering Service Dept.

DXA-D50

SERVICE MANUAL

AEP Model
UK Model

This set is the deck amplifier Section in XO-D50.

Dolby noise reduction manufactured under license from Dolby Laboratories Licensing Corporation.
"DOLBY" and the double-D symbol ▯▯ are trademarks of Dolby Laboratories Licensing Corporation.

SPECIFICATION

Amplifier section

Continuous RMS power output (Continental European model)
50W + 50W (at 1kHz, 5% T.H.D.)
Music power output (Continental European model)
85W + 85W (at 1kHz, 5% T.H.D.)
Peak music power output (model for other countries)
510W

Inputs

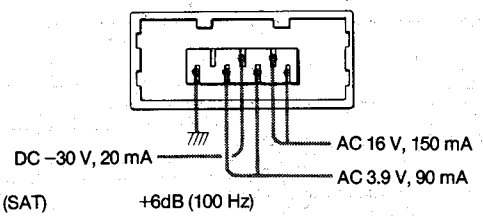
	Jack type	Sensitivity	Impedance
PHONO IN	Phono	2mV	50kohms
VIDEO/DAT	Phono	150mV	50kohms
CD	Phono	150mV	20kohms
MIC	Phone	2mV	20kohms

Outputs

	Jack type	Voltage	Impedance
VIDEO/DAT	Phono	150mV	470ohms
SURROUND speaker	Phono	Accepts speakers of 6ohms to 16ohms	
HEADPHONES	Stereo phone	Accepts headphones of 8ohms or more	

SYSTEM CONTROL connector

SYSTEM CONTROL 2: 7-pin



Model Name Using Similar Mechanism	New
Tape Transport Mechanism Type	DECK A: TCM-170RA1
	DECK B: TCM-170RB1

Cassette deck section

Recording system 4-track 2-channel stereo
Frequency response
DOLBY NR OFF (DIN)
With TYPE II cassette (Sony UX-S)
40 to 14,000Hz ± 3 dB
With TYPE I cassette (Sony HF-S)
40 to 13,000 Hz ± 3 dB
Wow and flutter 0.1% WRMS (NAB)
0.2% (DIN)

General

Power requirements
Continental European model: 220 VAC (240 VAC, adjustable by authorized Sony personnel), 50/60 Hz
Power consumption
Continental European model: 110W
AC outlet 2 Unswitched, total 100W max.
Dimensions Approx. 355 × 220 × 325 mm (w/h/d)
(14 × 8⅝ × 12¹¹⁄₁₆ inches)
Incl. projecting parts and controls
Weight Approx. 7.8 kg (17 lb 3 oz)

SAFETY-RELATED COMPONENT WARNING!!

COMPONENTS IDENTIFIED BY SHADING AND MARK ⚠ ON THE SCHEMATIC DIAGRAMS AND IN THE PARTS LIST ARE CRITICAL TO SAFE OPERATION. REPLACE THESE COMPONENTS WITH SONY PARTS WHOSE PART NUMBERS APPEAR AS SHOWN IN THIS MANUAL OR IN SUPPLEMENTS PUBLISHED BY SONY.

STEREO CASSETTE DECK AMPLIFIER

SONY®

MICROFILM

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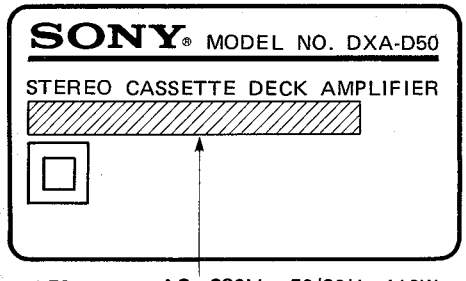
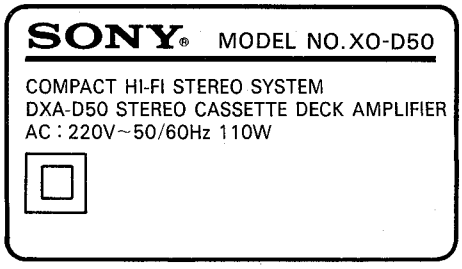
SECTION 1
GENERAL

1-1. MODEL IDENTIFICATION
—Specification Label—



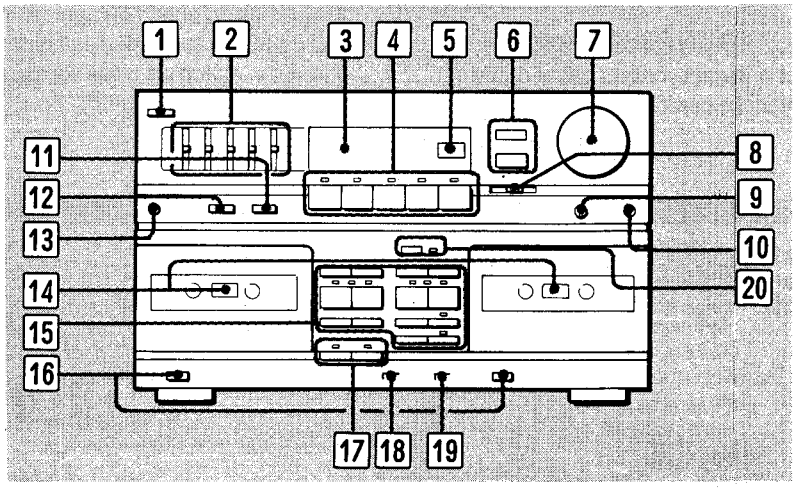
AEP model: AC : 220V ~ 50/60Hz 110W
UK model: AC : 240V ~ 50/60Hz 240W

WEST GERMANY model



1-2. PARTS IDENTIFICATION

Deck Amplifer



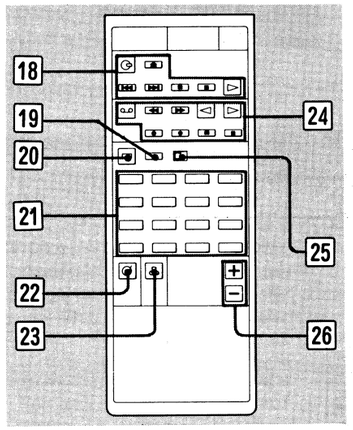
Amplifier section

1. **POWER switch**
2. **5 BAND GRAPHIC EQUALIZER controls**
3. **POWER LEVEL METER**
4. **Function selectors and indicators**
5. **Remote sensor**
6. **WM POSITION button**
7. **VOLUME control**
8. **BALANCE control**
9. **MIC (microphone) LEVEL control**
10. **MIC (microphone) jack** (phone jack)
11. **DOL (dynamic optimum loudness) button**
12. **SURROUND button : AEP, WEST GERMANY**
13. **HEADPHONES jack** (stereo phone jack)

Cassette deck section

14. **Cassette holders**
15. **Tape operation buttons**
    - ◀◀ Leftward fast winding
    - ▶▶ Rightward fast winding
    - ◁ Reverse play
    - ▷ Forward
    - ■ Stop
    - ❚❚ PAUSE
    - ○ REC MUTE
    - REC (Corresponding to ● on remote commander)
16. **⏏ EJECT buttons**
17. **DUBBING speed select buttons and indicators**
18. **DIRECTION MODE selectors**
19. **DOLBY NR* (Noise Reduction) switch**
20. **Tape COUNTER and RESET button**

Remote commander



18. **CD player operation buttons**
19. **BAND selector**
20. **TUNER button**
21. **Preset tuning buttons (for tuner)/direct music selection buttons (for CD player)**
22. **PHONO button**
23. **VIDEO/DAT button**
24. **TAPE deck operation buttons**
25. **TUNER/CD selector**
26. **VOLUME +/– buttons**

SECTION 2
MECHANICAL ADJUSTMENTS

PRECAUTION

1. Clean the following parts with a denatured-alxohol-moistened swab:
   Record/playback head, erase head, capstan, pinch roller, rubber belts, idlers
2. Demagnetize the record/playback head witn a head demagnetizer.
3. Do not use a magnetized screwdriver for the adjustments.
4. After the adjustments, apply suitable locking compound to the parts adjusted.
5. The adjustments should be performed with the rated power supply voltage unless otherwise noted.

2-1. Torque Measurement

Mode	Torque Motor	Torque
FWD	CQ-102C	30—70g • cm 0.41—0.97oz • inch
FWD back tension	CQ-102C	2—6g • cm 0.03—0.08oz • inch
REV	CQ-102RB	30—70g • cm 0.41—0.97oz • inch
REV back tension	CQ-102RB	2—6oz • cm 0.03—0.08oz • inch
FF, REW	CQ-201B	90—160g • cm 1.25—2.22oz • inch

SECTION 3
ELECTRICAL ADJUSTMENTS

Note: The adjustment should be performed in the order given in this service manual.
The adjustments should be performed for both L-CH and R-CH.

- Set the TAPE switches according to the tape as follows.

Tape	Tape Switch
CS-17	TYPE I
CS-26	TYPE II
CS-42	TYPE IV

- Switches and controls should be set as follows unless otherwise specified.
  DOLBY NR switch: OFF
- Standard Record:
  Deliver the standard input signal level to the input jack and set the REC LEVEL control to obtain the standard output signal level.

Standard Input Level

INPUT terminal	LINE IN
source impedance	10kΩ
input level	0.25V (−10dB)

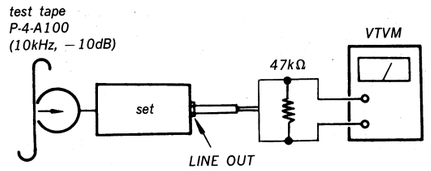
Standard Output Level

OUTPUT terminal	LINE OUT
load impedance	47kΩ
output level	0.435V (−5dB)

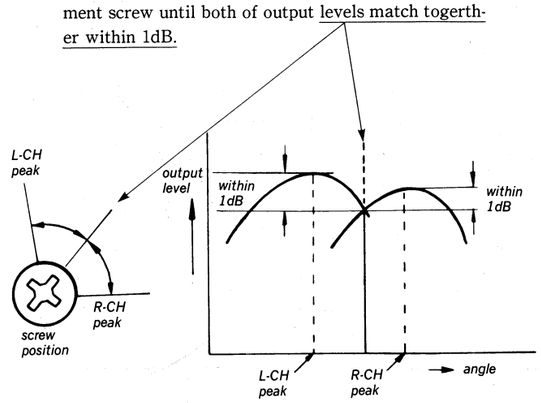
3-1. Record/playback Head Azimuth Adjustment

Procedure:

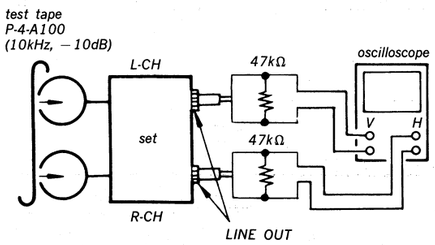
1. Mode: playback



2. Turn the adjustment screw for the maximum output levels. If these levels do not match, turn the adjustment screw until both of output levels match togerther within 1dB.

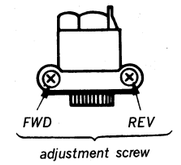


3. Phase Check
   Mode: playback



4. Repeat steps 1—3 in REV playback mode.
5. After the adjustment, lock the screws with locking compound.

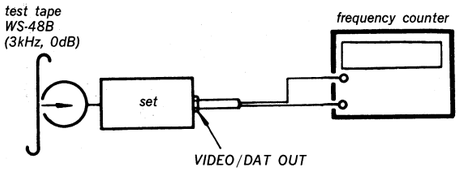
Adjustment Location:



3-2. Tape Speed Adjustment DECK A DECK B

Procedure:

Mode: playback



(High speed adjustment)

1. Playback WS-48B (Tape center portion) in High speed mode.
2. Adjust the deck A (H), deck B (H) so that at this time the frequency counter reads 5960Hz ±60Hz.

(Normal speed adjustment)

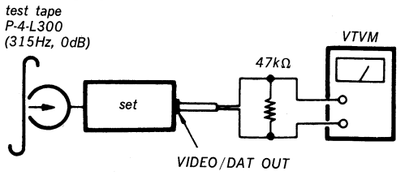
1. Playback WS-48B (Tape center portion) in Normal speed mode.
2. Adjustment the deck A (L), deck B (L) so that at this time the frequency counter reads 2960 ±30Hz.

Frequency difference between the beginning and the end of the tape should be within 0.23%.

3-3. Playback Level Adjustment DECK A DECK B

Procedure:

Mode: playback



Adjustment the RV41-A (L-ch), RV61-A (R-ch) of Deck A and RV41-B (L-ch), RV61-B (R-ch) of Deck B.

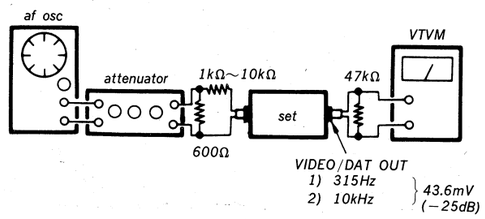
Specification:

VIDEO/DAT OUT LEVEL: 0.44 to 0.55V (−3 to −5dB)
Level difference between channels: less than 2dB
Check that the VIDEO/DAT OUT level does not change in playback mode while changing the mode from playback to stop several times.

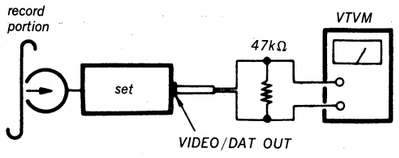
3-4. Record Bias Adjustment DECK B

Proocedure:

1. Mode: record monitor



2. Mode: playback

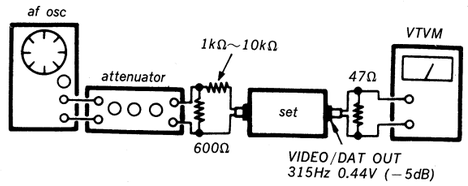


Playback the tape recorded in step 1.
Confirm that the VIDEO/DAT OUT level of 10kHz signal is 0 ±1dB relative to that of 315Hz. If not, adjust the RV42 (L-ch), RV62 (R-ch) and repeat steps 1 and 2.

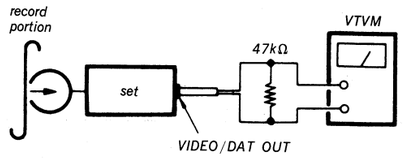
3-5. Record Level Adjustment DECK B

Procedure:

1. Mode: record monitor



2. Mode: playback



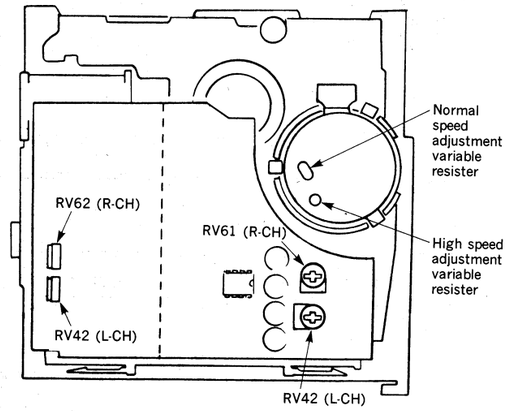
Adjust RV101 (L-CH), RV201 (R-CH).

Specification:

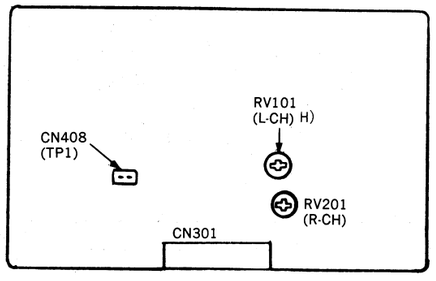
VIDEO/DAT OUT level: 0.41 to 0.46V (−5.5 to −4.5dB)

Adjustment Location:

—MD board—

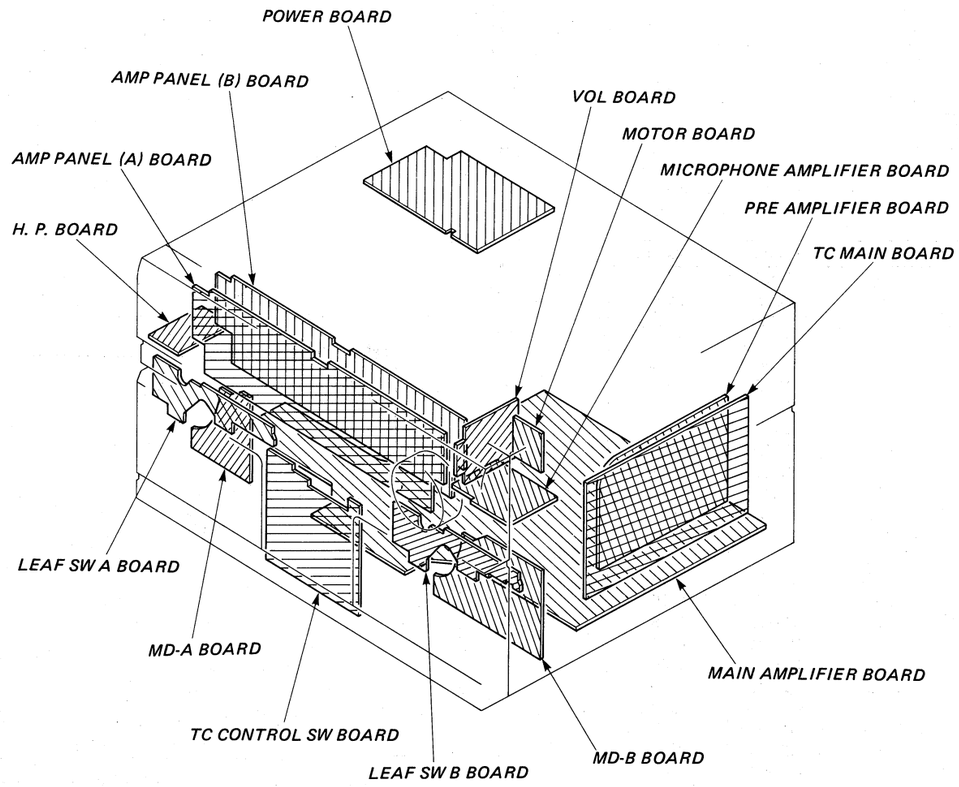


—TC MAIN board—



SECTION 4
DIAGRAMS

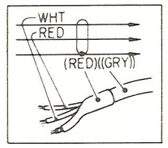
4-1. CIRCUIT BOARDS LOCATION



4-2. PRINTED WIRING BOARD —AUDIO SECTION—

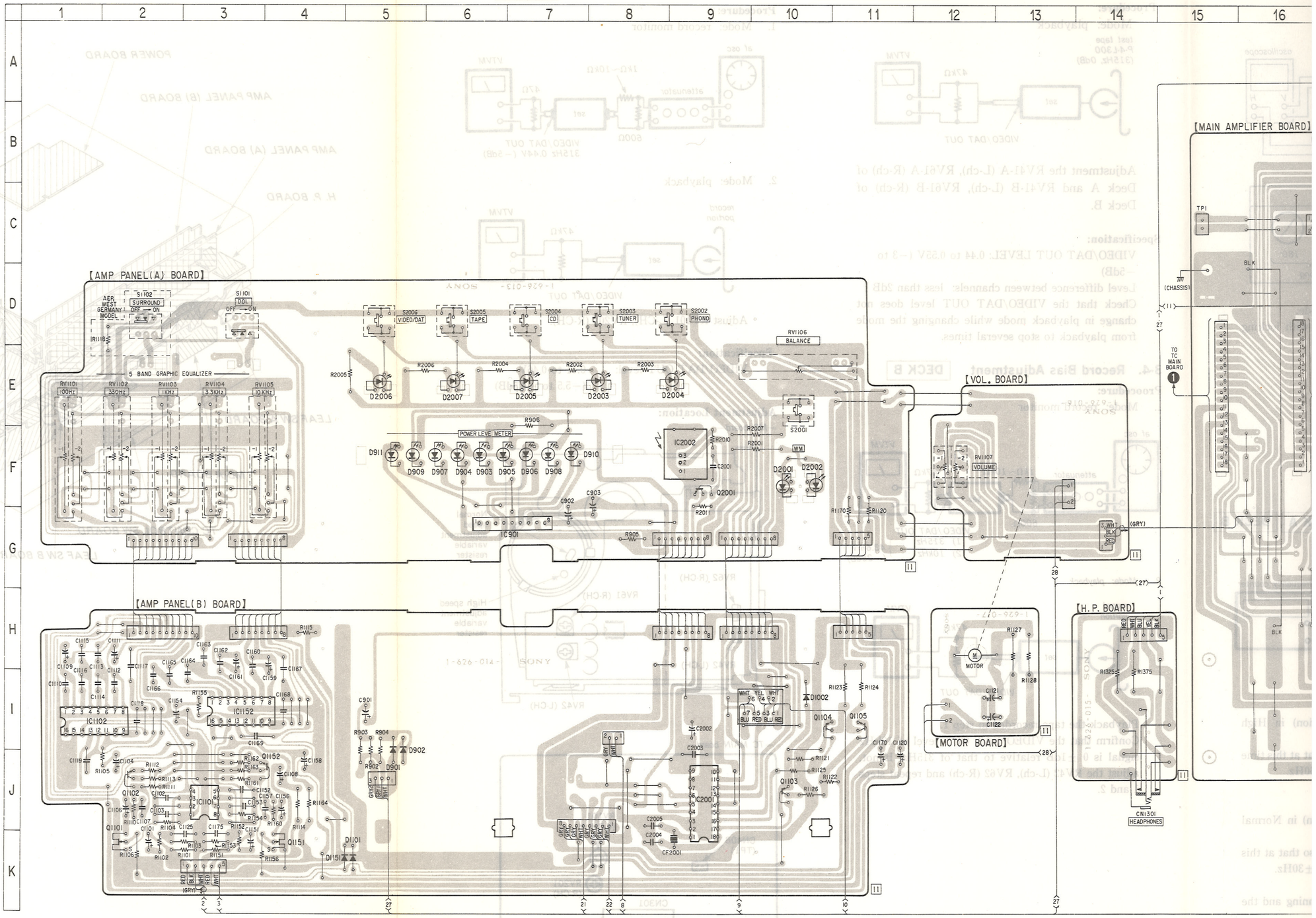
Note:

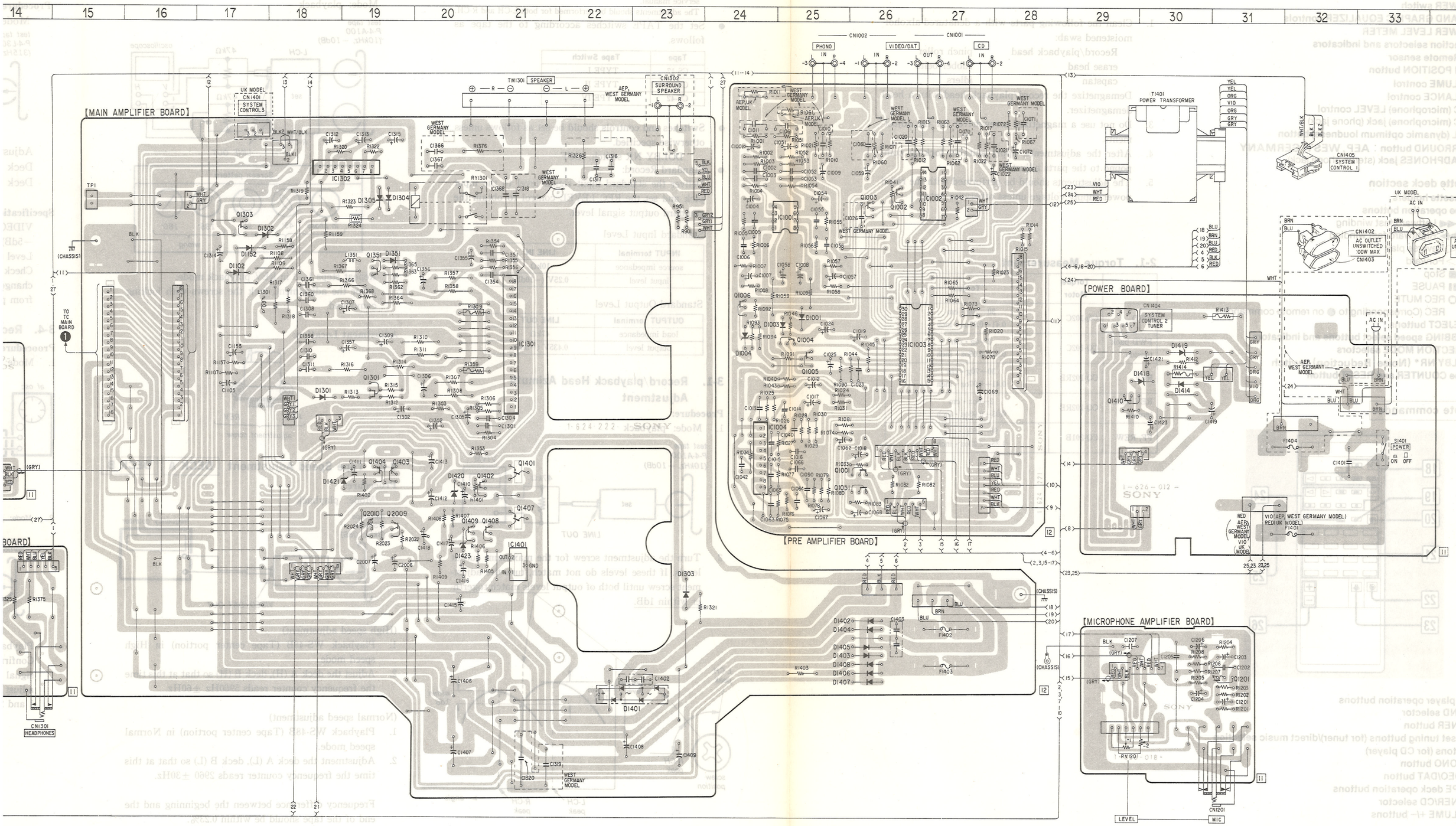
- Color code or sleeving over the end of the jacket.



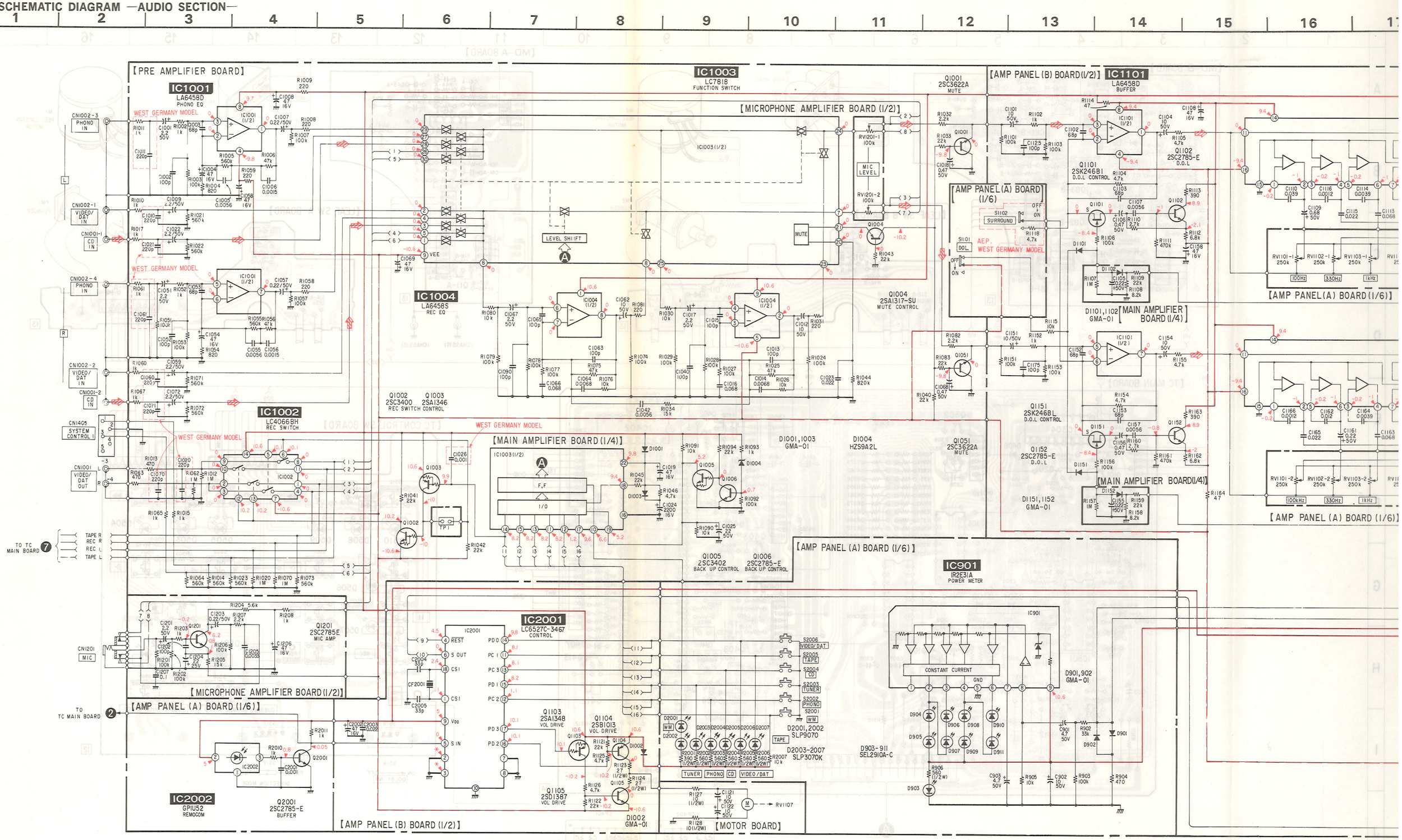
- ○—— : parts extracted from the component side.
- ■ : parts mounted on the conductor side.
- ⊡— indicates side identified with part number.

Ref. No.	Location	Re. No.	Location
D901	I-5	IC901	G-7
D902	I-5	IC1001	C-25
D903	F-6	IC1002	I-10
D904	F-6	IC1003	E-26
D905	F-7	IC1004	G-24
D906	F-7	IC1101	J-3
D907	F-6	IC1102	I-1
D908	F-7	IC1152	I-3
D909	F-5	IC301	E-21
D910	F-7	IC1302	C-19
D911	F-5	IC401	H-21
D1001	E-25	IC2001	J-9
D1002	I-10	IC2002	F-9
D1003	E-25		
D1004	E-24	Q1001	G-26
D1101	K-5	Q1002	C-26
D1102	D-17	Q1003	C-26
D1151	K-4	Q1004	E-25
D1152	D-17	Q1005	E-25
D1301	F-18	Q1006	D-24
D1302	C-17	Q1051	G-26
D1303	H-23	Q1101	K-2
D1304	C-19	Q1102	J-2
D1305	C-19	Q1103	J-10
D1351	D-19	Q1104	I-10
D1401	J-22	Q1105	I-11
D1402	I-26	Q1151	K-4
D1403	I-26	Q1152	J-3
D1404	I-26	Q1201	J-31
D1405	I-26	Q1301	F-19
D1406	I-26	Q1303	C-17
D1407	I-26	Q1351	D-19
D1408	I-26	Q1401	G-21
D1414	F-30	Q1402	G-20
D1418	E-29	Q1403	G-19
D1419	E-30	Q1404	G-19
D1420	G-20	Q1407	G-21
D1421	G-18	QQ1408	H-21
D1423	H-20	Q1409	H-20
D2001	F-10	Q1410	F-29
D2002	F-10	Q2001	F-9
D2003	E-8	Q2009	H-19
D2004	E-8	Q2010	H-19
D2005	E-7		
D2006	E-5		
D2007	E-6		

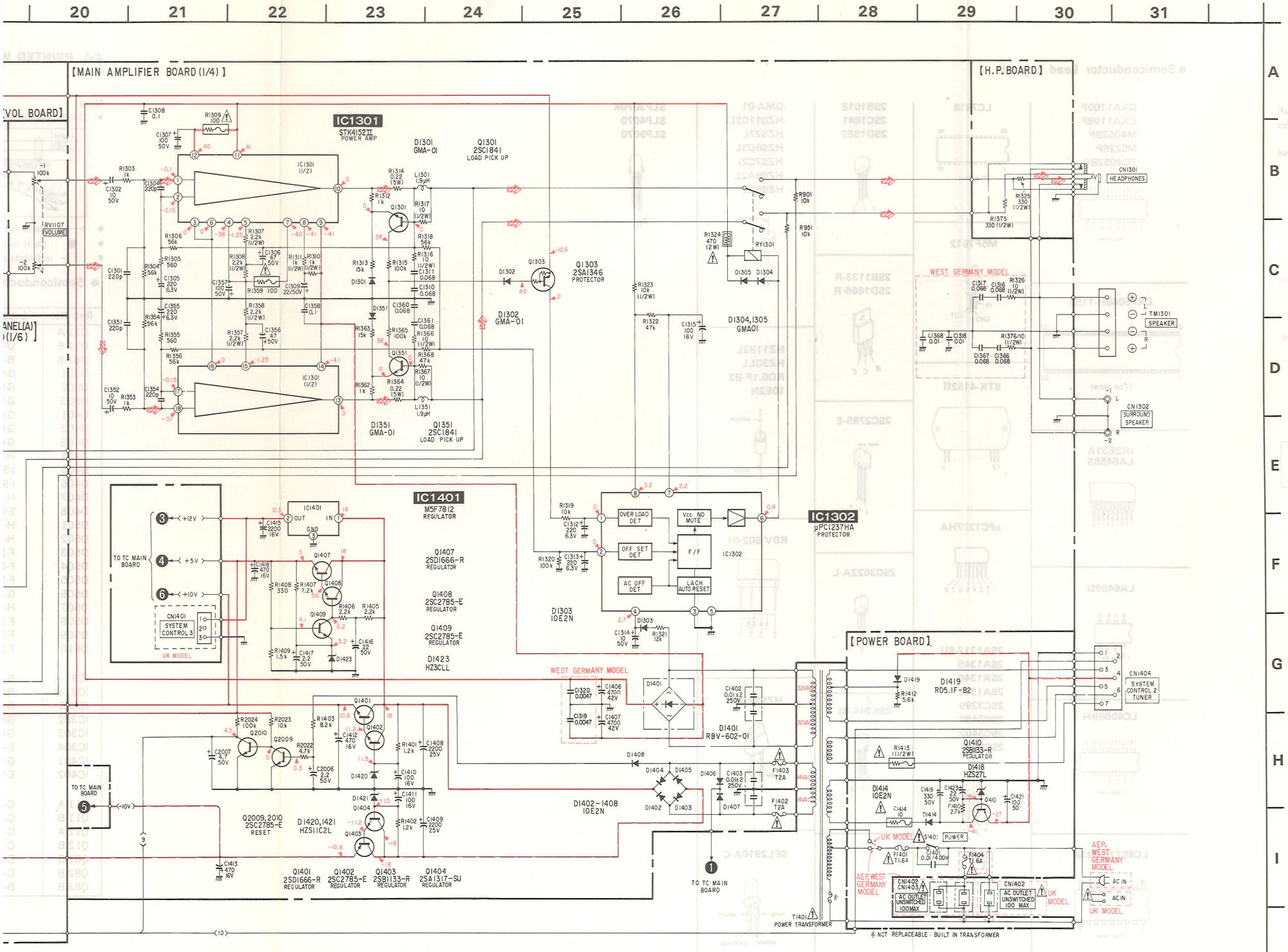



【MAIN AMPLIFIER BOARD】
【PRE AMPLIFIER BOARD】
【POWER BOARD】
【MICROPHONE AMPLIFIER BOARD】
CN1002
CN1001
PHONO
VIDEO/DAT
CD
SPEAKER
SURROUND SPEAKER
UK MODEL
AEP, WEST GERMANY MODEL
WEST GERMANY MODEL
AEP,UK MODEL
SYSTEM CONTROL3
SYSTEM CONTROL 2 TUNER
SYSTEM CONTROL 1
TO TC MAIN BOARD
HEADPHONES
POWER TRANSFORMER
AC IN
AC OUTLET UNSWITCHED 100W MAX
POWER
LEVEL
MIC
SONY

4-3. SCHEMATIC DIAGRAM —AUDIO SECTION—



DXA-D50



Note:

- All capacitors are in μF unless otherwise noted. pF: μμF 50WV or less are not indicated except for electrolytics and tantalums.
- All resistors are in Ω and ¼W or less unless otherwise specified.
- % : indicates tolerance.
- △ : internal component.
- : nonflammable resistor.
- : fusible resistor.
- : B+ Line
- : B− Line
- : adjustment for repair.
- Voltage and waveforms are dc with respect to ground under no-signal conditions.
  no mark : PLAY
- Voltages are taken with a VOM (50 kΩ/V).
  Voltage variations may be noted due to normal production tolerances.
- Signal path.

Note: The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety. Replace only with part number specified.

- Switch

Ref. No.	Switch	Position
S1101	DOL	OFF
S1102	ASURROUND	OFF
S1401	POWER	OFF
S2001	WM	OFF
S2002	PHONO	OFF
S2003	TUNER	OFF
S2004	CD	OFF
S2005	TAPE	OFF
S2006	VIDEO/DAT	OFF

Note on Schematic Diagram:

- All capacitors are in μF unless otherwise noted. pF: μμF 50WV or less are not indicated except for electrolytics and tantalums.
- All resistors are in Ω and 1/4W or less unless otherwise specified.
- % : indicates tolerance.
- △ : internal component.
- : nonflammable resistor.
- : fusible resistor.
- : B+ Line
- : B− Line
- : adjustment for repair.
- Voltage and waveforms are dc with respect to ground under no-signal conditions.
  no mark : PLAY
- Voltages are taken with a VOM (50 kΩ/V).
  Voltage variations may be noted due to normal production tolerances.
- Signal path.
  : PB (DECK A)
  : PB (DECK B)
  : REC (DECK B)

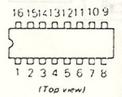
Note: The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety.
Replace only with part number specified.

- Switch

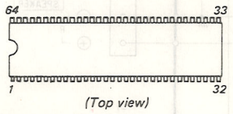
Ref. No.	Switch	Position
S501	▷(DECK A)	OFF
S502	◁(DECK A)	OFF
S503	◀◀(DECK A)	OFF
S504	▶▶(DECK A)	OFF
S505	■(DECK A)	OFF
S506	●REC MUTE	OFF
S507	▷(DECK B)	OFF
S508	◁(DECK B)	OFF
S509	▮▮PAUSE	OFF
S511	REC	OFF
S512	◀◀(DECK B)	OFF
S513	▶▶(DECK B)	OFF
S514	■(DECK B)	OFF
S515	DUBBING HIGH SPEED (DECK B)	OFF
S516	DUBBING NORMAL SPEED (DECK B)	OFF
S517	DIRECTION MODE	⇄
S519	DOLBY NR	OFF

● Semiconductor Lead Layouts

CXA1100P, CXA1198P, M4053BP, M5226P, TC4052BP



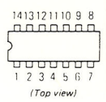
CXP5048H-115S



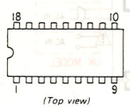
IR2E31A, LA6458S

LA6458D

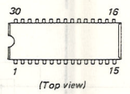
LC4066BH



LC6527C-3438

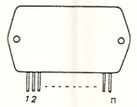


LC7818



M5F7812

STK-4152II

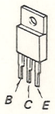


μPC1237HA

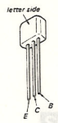
2SA1317-SU, 2SA1345, 2SA1346, 2SA1348, 2SC3399, 2SC3400, 2SC3402, 2SC3901

2SB1013, 2SC1841, 2SD1387

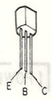
2SB1133-R, 2SD1666-R



2SC2785-E

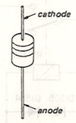


2SC3622A-L

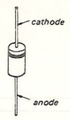


2SK246-BL

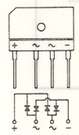
GMA-01, HZS11C2L, HZS27L, HZS6C3L, HZS7C2L, HZS9A2L, HZ9B2L



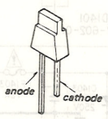
HZ11B2L, HZ3CLL, RD5.1F-B2, 10E2N



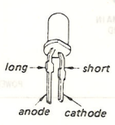
RBV-602-01



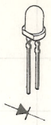
HZS27-2L



SEL2910A-C



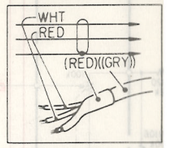
SLP3070K, SLP4070, SLP9070



4-4. PRINTED WIR

Note:

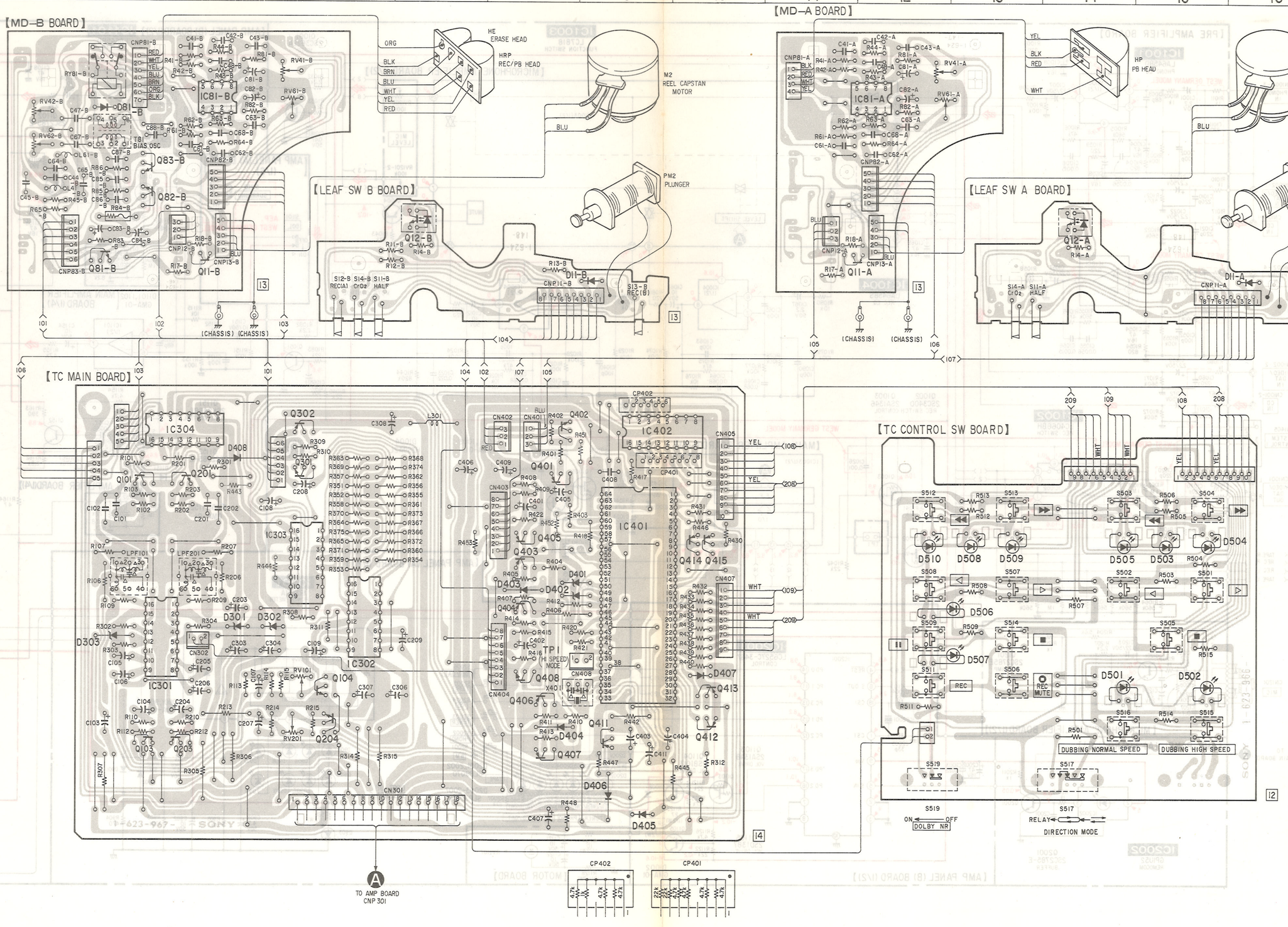
- Color code or sleevin



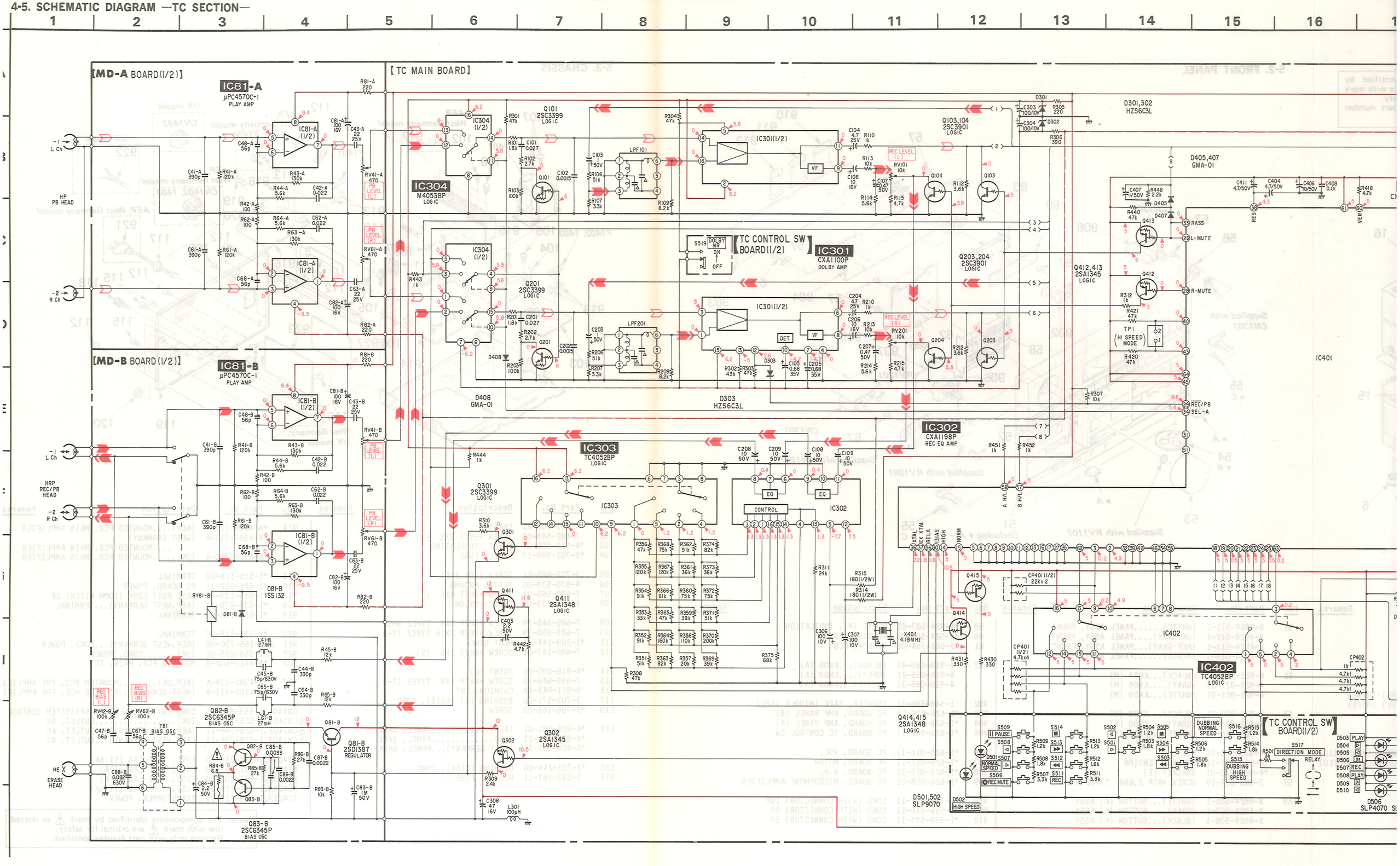
- ○—— : parts extract
- ■ : parts mount
- indicates side

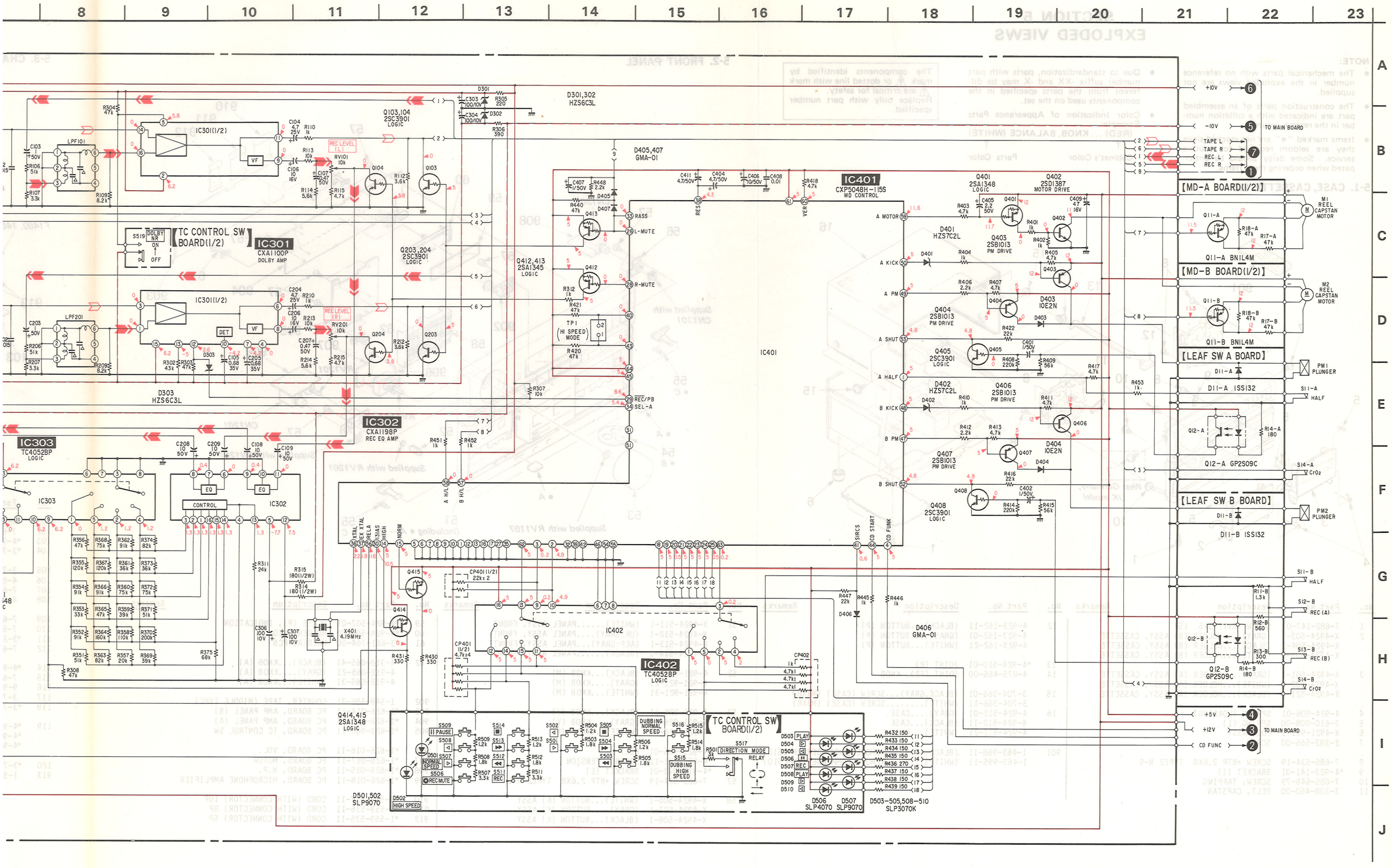
● Semiconductor

Ref. No.	Location
D11-A	D-16
D11-B	D-9
D81-B	B-3
D301	G-5
D302	G-5
D303	G-3
D401	G-8
D402	G-8
D403	G-8
D404	H-8
D405	I-9
D406	I-9
D407	H-10
D408	E-5
D501	H-14
D502	H-15
D503	F-15
D504	F-15
D505	F-14
D506	G-12
D507	H-12
D508	F-13
D509	F-13
D510	F-12
IC81-A	B-12
IC81-B	B-5
IC301	G-4
IC302	G-6
IC303	G-6
IC304	E-4
IC401	G-9
IC402	E-9
Q11-A	C-11
Q11-B	C-4
Q12-A	C-14
Q12-B	C-7
Q81-B	C-3
Q82-B	C-4
Q83-B	B-4


【MD-B BOARD】
【MD-A BOARD】
【LEAF SW B BOARD】
【LEAF SW A BOARD】
【TC MAIN BOARD】
【TC CONTROL SW BOARD】
HE ERASE HEAD
HRP REC/PB HEAD
M2 REEL CAPSTAN MOTOR
PM2 PLUNGER
HP PB HEAD
M1 REEL CAPSTAN MOTOR
PM1 PLUNGER
ORG
BLK
BRN
BLU
WHT
YEL
RED
(CHASSIS)
DUBBING NORMAL SPEED
DUBBING HIGH SPEED
DOLBY NR
DIRECTION MODE
TO AMP BOARD CNP 301

4-5. SCHEMATIC DIAGRAM —TC SECTION—




【TC CONTROL SW BOARD(1/2)】
IC301
CXA1100P
DOLBY AMP
IC302
CXA1198P
REC EQ AMP
IC303
TC4052BP
LOGIC
IC401
CXP5048H-115S
MD CONTROL
IC402
TC4052BP
LOGIC
【MD-A BOARD(1/2)】
【MD-B BOARD(1/2)】
【LEAF SW A BOARD】
【LEAF SW B BOARD】
【TC CONTROL SW BOARD(1/2)】
TO MAIN BOARD
Q11-A BN1L4M
Q11-B BN1L4M
Q12-A GP2S09C
Q12-B GP2S09C
D11-A 1SS132
D11-B 1SS132
D301,302 HZS6C3L
D303 HZS6C3L
D401 HZS7C2L
D402 HZS7C2L
D405,407 GMA-01
D406 GMA-01
D501,502 SLP9070
D503-505,508-510 SLP3070K
D506 SLP4070
D507 SLP9070
Q103,104 2SC3901 LOGIC
Q203,204 2SC3901 LOGIC
Q412,413 2SA1345 LOGIC
Q414,415 2SA1348 LOGIC
Q401 2SA1348 LOGIC
Q402 2SD1387 MOTOR DRIVE
Q403 2SB1013 PM DRIVE
Q404 2SB1013 PM DRIVE
Q405 2SC3901 LOGIC
Q406 2SB1013 PM DRIVE
Q407 2SB1013 PM DRIVE
Q408 2SC3901 LOGIC
X401 4.19MHz
TAPE L
TAPE R
REC L
REC R
+10V
-10V
+5V
+12V
CD FUNC
M1 REEL CAPSTAN MOTOR
M2 REEL CAPSTAN MOTOR
PM1 PLUNGER
PM2 PLUNGER
S11-A HALF
S14-A CrO2
S11-B HALF
S12-B REC(A)
S13-B REC(B)
S14-B CrO2
A MOTOR
A KICK
A PM
A SHUT
A HALF
B KICK
B PM
B SHUT
RASS
L-MUTE
R-MUTE
REC/PB SEL-A
A H/L
B H/L
XTAL
EX XTAL
RELA
13IAS
HIGH
NORM
SIRCS
CD START
CD FUNK
RES
VER
DOLBY NR ON OFF
REC LEVEL (L)
REC LEVEL (R)
TPI (HI SPEED MODE)
DUBBING NORMAL SPEED
DUBBING HIGH SPEED
DIRECTION MODE RELAY
NORMAL SPEED
HIGH SPEED
REC MUTE
CONTROL
EQ
VF
DET

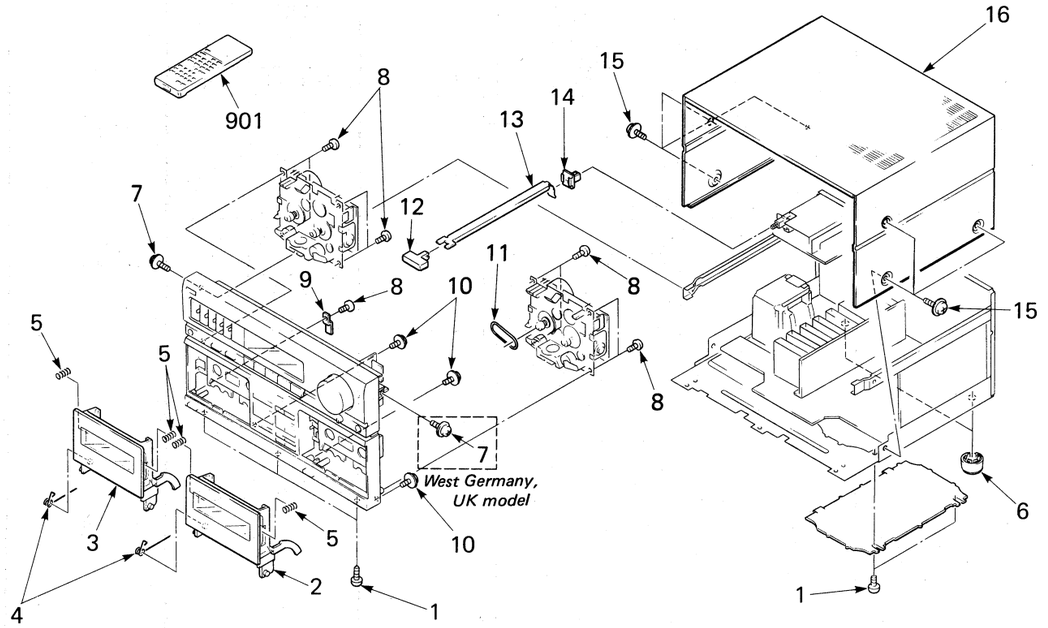
SECTION 5
EXPLODED VIEWS

NOTE:

- The mechanical parts with no reference number in the exploded views are not supplied.
- The construction parts of an assembled part are indicated with a collation number in the remark column.
- Items marked "★" are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.
- Due to standardization, parts with part number suffix -XX and -X may be different from the parts specified in the components used on the set.
- Color Indication of Appearance Parts
  Example:
  (RED) . . . KNOB, BALANCE (WHITE)
  ↑ Cabinet's Color ↑ Parts Color

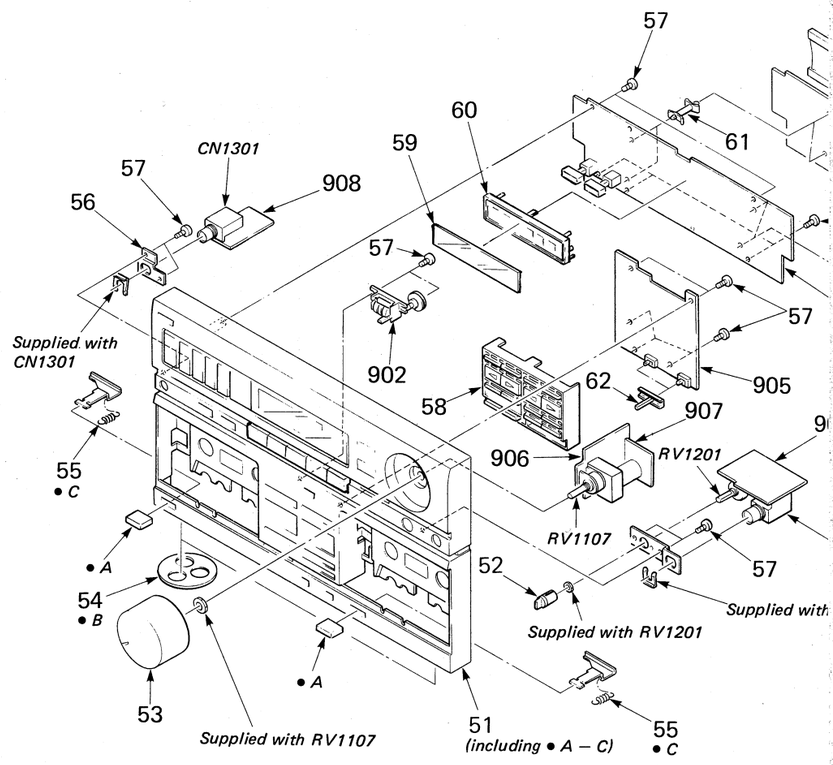
The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety.
Replace only with part number specified.

5-1. CASE, CASSETTE LID

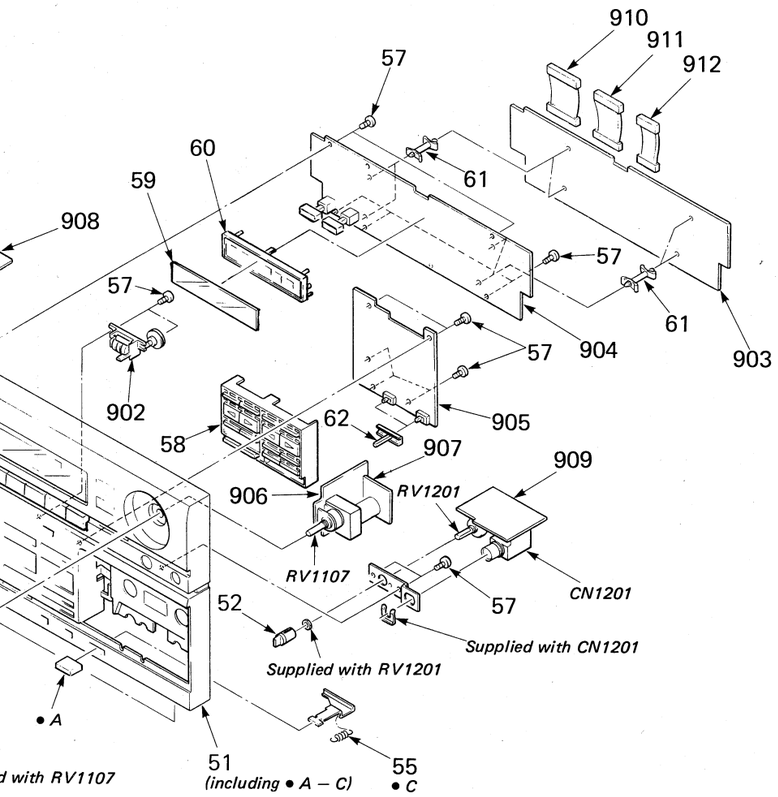


No.	Part No.	Description	Remarks
1	7-682-147-01	SCREW +BVTT 3X6 (S)	
2	X-4924-503-1	(GRAY)....HOLDER (B) ASSY, CASSETTE	
	X-4924-504-1	(BLACK)...HOLDER (B) ASSY, CASSETTE	
	X-4924-505-1	(WHITE)...HOLDER (B) ASSY, CASSETTE	
3	X-4924-501-1	(GRAY)....HOLDER (A) ASSY, CASSETTE	
	X-4924-502-1	(WHITE)...HOLDER (A) ASSY, CASSETTE	
	X-4924-521-1	(BLACK)...HOLDER (A) ASSY, CASSETTE	
4	4-924-506-01	SPRING (LOADING)	
5	3-610-808-00	SPRING (1)	
6	X-4921-901-1	FOOT ASSY	
7	2-383-566-00	SCREW	
8	7-685-534-19	SCREW +BTP 2.6X8 TYPE2 N-S	
9	*4-923-141-01	BRACKET (I)	
10	7-685-648-79	SCREW, TAPPING	
11	3-308-460-00	BELT, CAPSTAN	
12	4-923-162-11	(BLACK)...BUTTON (P)	
	4-923-162-01	(GRAY)....BUTTON (P)	
	4-923-162-21	(WHITE)...BUTTON (P)	
13	*4-924-510-01	JOINT (P)	
14	4-875-466-00	JOINT (F2), KNOB	
15	3-704-366-01	(BLACK,GRAY)...SCREW (CASE) (M3X8)	
	3-704-366-11	(WHITE).....SCREW (CASE) (M3X8)	
16	4-924-512-01	(GRAY)....CASE	
	4-924-512-11	(BLACK)...CASE	
	4-924-512-21	(WHITE)...CASE	
901	1-463-988-11	(BLACK,GRAY)...REMOTE COMMANDER(RM-L510)	
	1-463-995-11	(WHITE).....REMOTE COMMANDER(RM-L510)	

5-2. FRONT PANEL



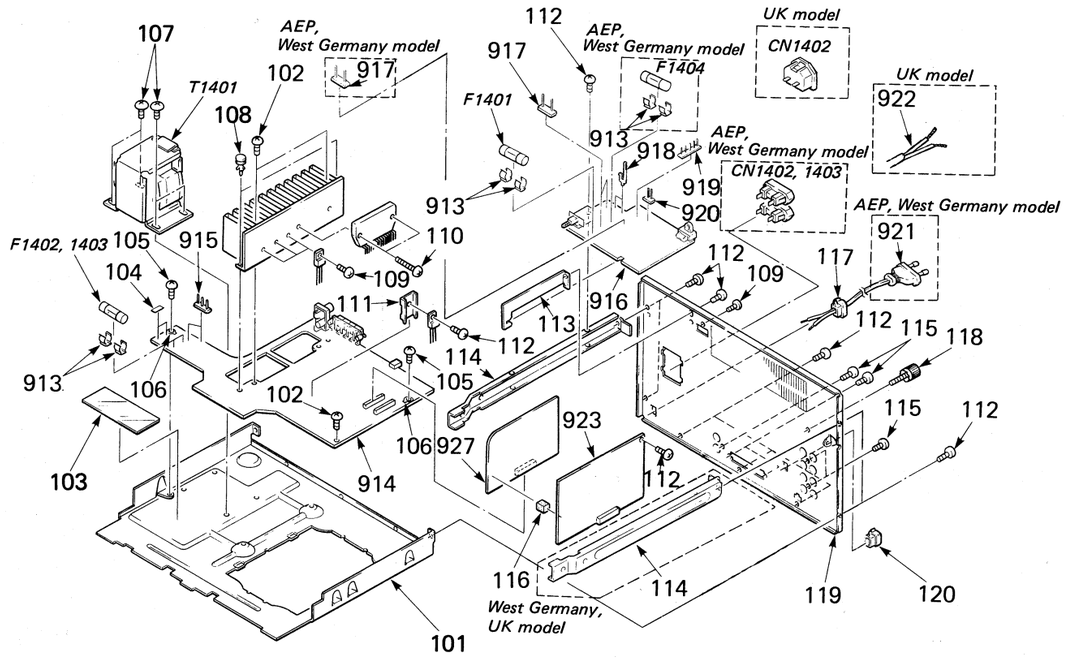
No.	Part No.	Description	Remarks
51	X-4924-511-1	(WHITE).....PANEL ASSY, FRONT	
	X-4924-512-1	(UK:GRAY)....PANEL ASSY, FRONT	
	X-4924-513-1	(AEP:GRAY)...PANEL ASSY, FRONT	
	X-4924-514-1	(BLACK).....PANEL ASSY, FRONT	
52	4-921-921-01	(BLACK)...KNOB (M)	
	4-921-921-21	(GRAY)....KNOB (M)	
	4-921-921-31	(WHITE)...KNOB (M)	
53	4-921-926-11	(BLACK)...KNOB (V)	
	4-921-926-21	(GRAY)....KNOB (V)	
	4-921-926-31	(WHITE)...KNOB (V)	
54	4-921-906-01	FELT	
55	4-885-182-11	SPRING, TENSION	
56	*4-918-073-01	BRACKET (E)	
57	7-685-534-19	SCREW +BTP 2.6X8 TYPE2 N-S	
58	X-4924-506-1	(WHITE)...BUTTON (K) ASSY	
	X-4924-507-1	(GRAY)....BUTTON (K) ASSY	
	X-4924-508-1	(BLACK)...BUTTON (K) ASSY	
59	*4-924-507-01	PLATE (P), IND	
60	*4-924-509-01	HOLDER, LED	
61	*3-661-764-00	HOLDER, PCB	
62	4-918-065-41	(BLACK)...KNOB	
	4-918-065-21	(GRAY)....KNOB	
	4-918-065-31	(WHITE)...KNOB	
902	1-548-596-31	COUNTER, TAPE	
903	*1-626-014-11	PC BOARD, AMP	
904	*1-626-013-11	PC BOARD, AMP	
905	*1-623-966-11	PC BOARD, TC C	
906	*1-626-016-11	PC BOARD, VOL.	
907	*1-626-017-11	PC BOARD, MOTO	
908	*1-626-015-11	PC BOARD, H.P.	
909	*1-626-018-11	PC BOARD, MICR	
910	*1-559-537-11	CORD (WITH CON	
911	*1-559-536-11	CORD (WITH CON	
912	*1-559-535-11	CORD (WITH CON	



	Remarks
ANEL ASSY, FRONT	
ANEL ASSY, FRONT	
ANEL ASSY, FRONT	
ANEL ASSY, FRONT	
(M)	
(M)	
(M)	
(V)	
(V)	
(V)	
N	
X8 TYPE2 N-S	
ON (K) ASSY	
ON (K) ASSY	
ON (K) ASSY	

No.	Part No.	Description	Remarks
59	*4-924-507-01	PLATE (P), INDICATION	
60	*4-924-509-01	HOLDER, LED	
61	*3-661-764-00	HOLDER, PCB	
62	4-918-065-41	(BLACK)...KNOB (A)	
	4-918-065-21	(GRAY)....KNOB (A)	
	4-918-065-31	(WHITE)...KNOB (A)	
902	1-548-596-31	COUNTER, TAPE (MIDDLE TYPE)	
903	*1-626-014-11	PC BOARD, AMP PANEL (B)	
904	*1-626-013-11	PC BOARD, AMP PANEL (A)	
905	*1-623-966-11	PC BOARD, TC CONTROL SW	
906	*1-626-016-11	PC BOARD, VOL.	
907	*1-626-017-11	PC BOARD, MOTOR	
908	*1-626-015-11	PC BOARD, H.P.	
909	*1-626-018-11	PC BOARD, MICROPHONE AMPLIFIER	
910	*1-559-537-11	CORD (WITH CONNECTOR) 10P	
911	*1-559-536-11	CORD (WITH CONNECTOR) 8P	
912	*1-559-535-11	CORD (WITH CONNECTOR) 5P	

5-3. CHASSIS



No.	Part No.	Description	Remarks
101	*4-921-903-23	CHASSIS	
102	7-682-548-04	SCREW +BVTT 3X8 (S)	
103	*4-924-505-01	SHEET, INSULATING	
104	*3-701-948-17	LABEL, FUSE	
105	3-703-685-21	SCREW (+BV 3X8)	
106	4-870-539-00	PLATE, GROUND	
107	7-682-560-04	SCREW +BVTT 4X6 (S)	
108	4-917-239-01	RIVET, NYLON	
109	7-685-646-79	SCREW +BVTP 3X8 TYPE2 N-S	
110	7-685-650-79	SCREW +BVTP 3X16 TYPE2 IT-3	
111	*3-309-144-21	HEAT SINK	
112	7-682-147-01	SCREW +BVTT 3X6 (S)	
114	*4-918-090-01	JOINT (C)	
115	7-685-646-79	SCREW +BVTP 3X8 TYPE2 IT-3	
116	9-911-843-XX	CUSHION, CRT	
117	3-703-571-00	BUSHING (S) (4516), CORD	
118	*3-706-165-00	SCREW	
119	*4-924-501-01	(AEP).....PANEL, BACK	
	*4-924-501-21	(UK).....PANEL, BACK	
	*4-924-501-31	(WEST GERMANY)...PANEL, BACK	
120	*3-703-244-00	BUSHING (2104), CORD	
913	1-533-183-11	HOLDER, FUSE	

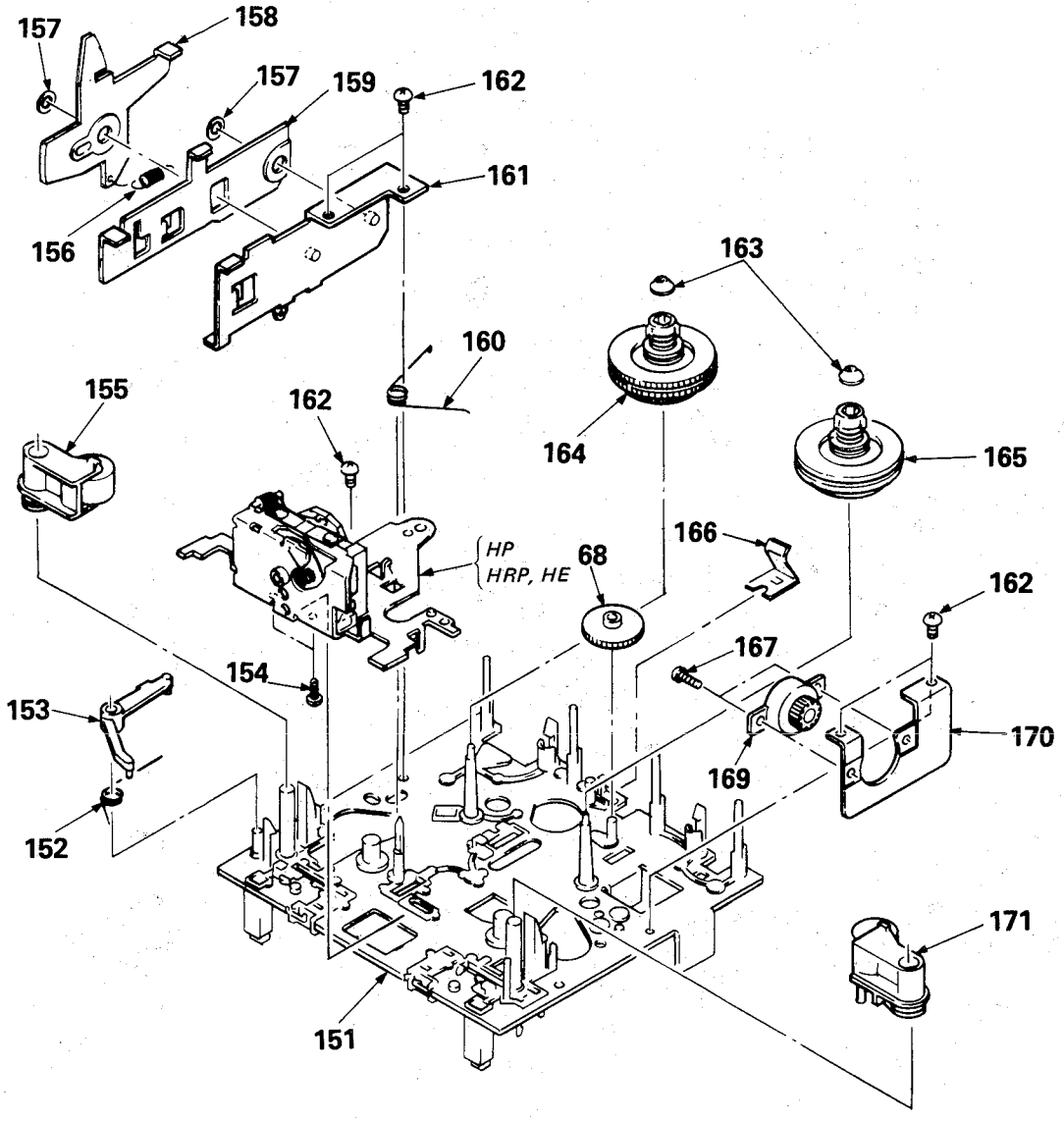
No.	Part No.	Description	Remarks
914	*A-4388-718-A	(AEP)....MOUNTED PCB, MAIN AMPLIFIER	
	*A-4388-719-A	(WEST GERMANY) ....MOUNTED PCB, MAIN AMPLIFIER	
	*A-4388-720-A	(UK).....MOUNTED PCB, MAIN AMPLIFIER	
915	*1-535-116-00	TERMINAL	
916	*1-626-012-11	PC BOARD, POWER	
917	*1-535-139-00	BASE POST 22MM (10MM PITCH) 2P	
918	*1-535-476-11	(AEP,WEST GERMANY)...TERMINAL	
919	*1-535-118-00	TERMINAL	
920	*1-535-115-00	TERMINAL	
921	⚠1-555-750-00	(AEP,WEST GERMANY)...CORD, POWER	
922	⚠1-556-035-00	(UK).....CORD, POWER	
923	*A-4410-602-A	MOUNTED PCB, MAIN, TC	
927	*A-4382-334-A	(AEP,UK).....MOUNTED PCB, PRE AMPLIFIER	
	*A-4382-335-A	(WEST GERMANY)..MOUNTED PCB, PRE AMPLIFIER	
CN1401	1-559-831-11	CORD (WITH CONNECTOR) 5P(SYSTEM CONTROL 1)	
⚠CN1402	1-526-751-00	(UK).....OUTLET, AC	
⚠CN1402	1-526-794-11	(AEP,WEST GERMANY)...OUTLET, AC	
⚠CN1403	1-526-794-11	(AEP,WEST GERMANY)...OUTLET, AC	
F1401	⚠1-532-259-00	FUSE, TIME-LAG (T1.6A)	
F1402	⚠1-532-203-00	FUSE, TIME-LAG (T2A)	
F1403	⚠1-532-203-00	FUSE, TIME-LAG (T2A)	
F1404	⚠1-532-259-00	FUSE, TIME-LAG (T1.6A)	
T1401	⚠1-449-219-11	TRANSFORMER, POWER	

Note: The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety. Replace only with part number specified.

5-4. MECHANISM DECK (1)

DECK A : TCM-170RA1

DECK S : TCM-170RB1



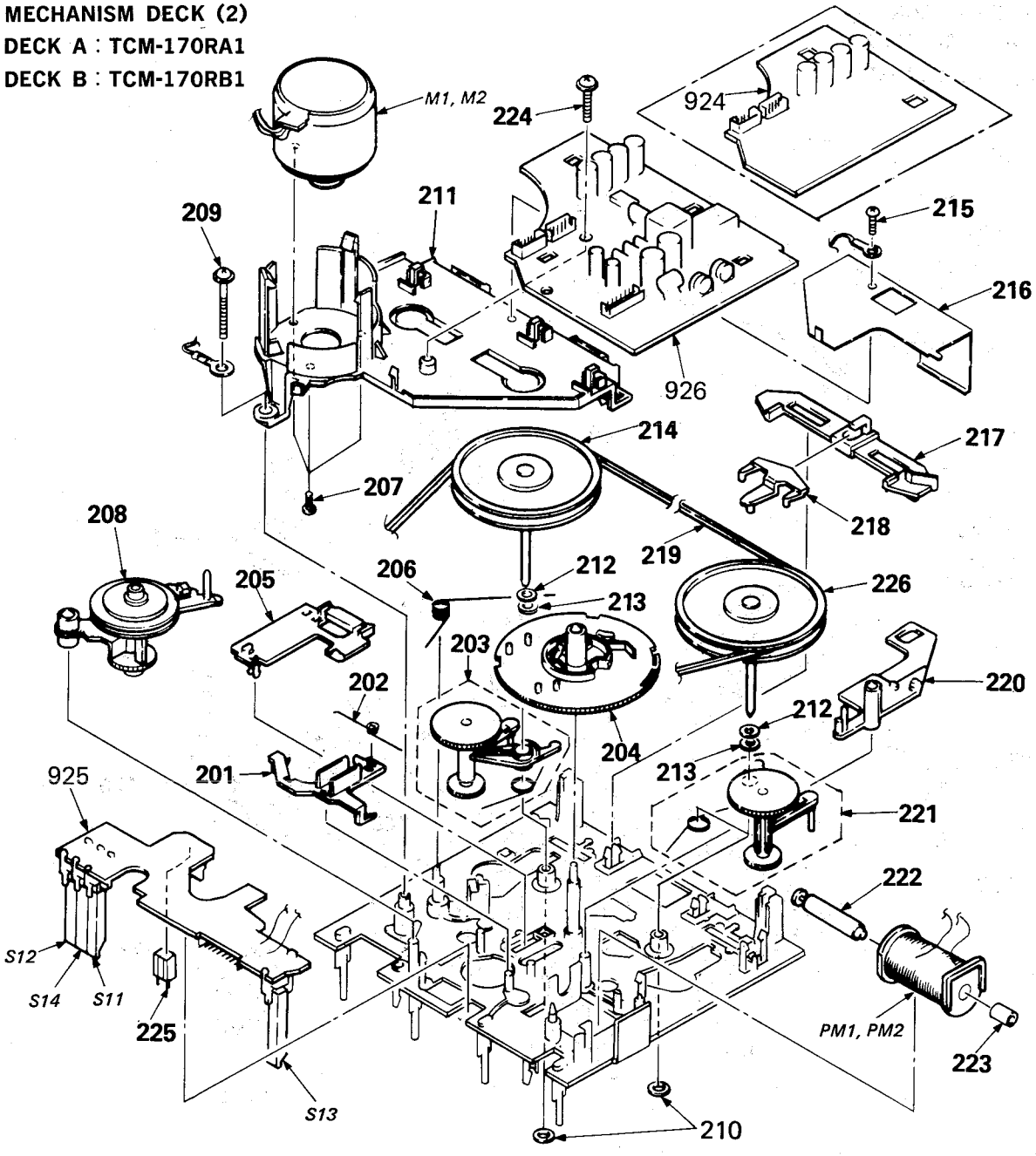
No.	Part No.	Description	Remarks
151	X-3343-413-1	CHASSIS ASSY, MECHANICAL	
152	3-343-448-01	SPRING, TORSION	
153	3-343-416-01	LEVER (EJECT SAFETY LEVER)	
154	7-685-102-19	SCREW +P 2X4 NON-SLIT TYPE 2	
155	X-3343-403-1	LEVER (PINCH LEVER REV) ASSY	
156	3-343-474-01	SPRING, TENSION	
157	3-558-708-21	WASHER, STOPPER	
158	*3-343-449-01	LEVER (LOCK LEVER)	
159	*3-343-450-01	LEVER (EJECT LEVER)	
160	3-343-401-01	SPRING, TORSION	
161	*X-3343-410-1	BRACKET (EJECT) ASSY	
162	7-621-773-86	SCREW +BVTT 2.6X4 (S)	

No.	Part No.	Description	Remarks
163	3-343-439-01	CAP (REEL TABLE)	
164	X-3343-415-1	TABEL (REV) ASSY, REEL	
165	X-3343-401-1	TABEL ASSY, REEL	
166	3-343-420-01	SPRING, LEAF	
167	7-621-255-15	SCREW +PTT 2X3 (S)	
168	3-343-411-01	GEAR (FF GEAR)	
169	3-319-224-31	DAMPER, SMALL	
170	*3-343-438-01	BRACKET (DAMPER BRACKET)	
171	X-3343-402-1	LEVER (PINCH LEVER FWD) ASSY	
HE	A-2108-123-A	(DECK B)...PC BOARD ASSY, HEAD (HRP/HE)	
HP	A-2108-122-A	(DECK A)...PC BOARD ASSY, HEAD (HP)	
HRP	A-2108-123-A	(DECK B)...PC BOARD ASSY, HEAD (HRP/HE)	

5-5. MECHANISM DECK (2)

DECK A : TCM-170RA1

DECK B : TCM-170RB1



No.	Part No.	Description	Remarks
201	3-343-453-01	SLIDER (BRAKE PLATE)	
202	3-343-429-01	SPRING, TORSION	
203	X-3343-406-1	LEVER (TU ARM REV) ASSY	
204	3-343-470-01	GEAR (CAM GEAR)	
205	*3-343-461-01	SLIDER	
206	3-343-430-01	SPRING, TORSION	
207	7-627-556-28	SCREW +P 2.6X3.5	
208	X-3343-414-1	LAVER (FR ARM) ASSY	
209	3-343-403-01	SCREW (PTTWH 2X18)	
210	3-343-473-01	WASHER, NYLON	
211	*X-3343-407-1	BASE (THRUST RETAINER) ASSY	
212	4-605-835-11	WASHER (2.6), POLYSLIDER	
213	3-307-482-00	WASHER, LUMILER	
214	X-3343-411-1	FLYWHEEL COMPLETE ASSY	
215	7-685-102-19	SCREW +P 2X4 NON-SLIT TYPE 2	
216	*3-343-480-01	PLATE, SHIELD	
217	*3-343-457-01	SLIDER (REVERSE SLIDER)	

No.	Part No.	Description	Remarks
218	3-343-462-01	LEVER	
219	3-343-426-01	BELT (CAPSTAN BELT SQUARE)	
220	*3-343-456-01	LEVER (PM LEVER)	
221	X-3343-405-1	LEVER (TU ARM FWD) ASSY	
222	*3-343-425-01	ARBOR(MOVABLE IRON ARBOR),IRON	
223	*3-343-424-01	ARBOR (FIXED IRON ARBOR), IRON	
224	3-343-404-01	SCREW (PTPWH 2X10)	
225	*3-343-419-01	HOLDER (S SENSER A)	
226	X-3343-416-1	FLYWHEEL (REV) COMPLETE ASSY	
924	*1-624-147-13	(DECK A)...PC BOARD, MD-A	
925	*1-624-148-11	PC BOARD, LEAF SW (A)/(B)	
926	*1-624-146-11	(DECK B)...PC BOARD, MD-B	
M1	X-3343-408-1	MOTOR ASSY	
M2	X-3343-408-1	MOTOR ASSY	
PM1	1-454-456-11	PLUNGER	
PM2	1-454-456-11	PLUNGER	

SECTION 6
ELECTRICAL PARTS LIST

NOTE:

- Due to standardization, replacements in the parts list may be different from the parts specified in the diagrams or the components used on the set.
- Items marked "★" are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.
- If there are two or more same circuits in a set such as a stereophonic machine, only typical circuit parts may be indicated and capacitors and resistors in other same circuits may be omitted.

CAPACITORS:
MF: μF, PF: μμF.

RESISTORS
- All resistors are in ohms.
- F: nonflammable

COILS
- MMH: mH, UH: μH

SEMICONDUCTORS
In each case, U: μ, for example:
UA...: μA..., UPA...: μPA...,
UPC...: μPC, UPD...: μPD...

The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety.
Replace only with part number specified.

Ref.No.	Part No.	Description
901	1-463-988-11	(BLACK,GRAY) ...REMOTE COMMANDER (RM-L510)
	1-463-995-11	(WHITE)....REMOTE COMMANDER (RM-L510)
902	1-548-596-31	COUNTER, TAPE (MIDDLE TYPE)
903	*1-626-014-11	PC BOARD, AMP PANEL (B)
904	*1-626-013-11	PC BOARD, AMP PANEL (A)
905	*1-623-966-11	PC BOARD, TC CONTROL SW
906	*1-626-016-11	PC BOARD, VOL.
907	*1-626-017-11	PC BOARD, MOTOR
908	*1-626-015-11	PC BOARD, H.P.
909	*1-626-018-11	PC BOARD, MICROPHONE AMPLIFIER
910	*1-559-537-11	CORD (WITH CONNECTOR) 10P
911	*1-559-536-11	CORD (WITH CONNECTOR) 8P
912	*1-559-535-11	CORD (WITH CONNECTOR) 5P
913	1-533-183-11	HOLDER, FUSE
914	*A-4388-718-A	(AEP)....MOUNTED PCB, MAIN AMPLIFIER
	*A-4388-719-A	(WEST GERMANY) ....MOUNTED PCB, MAIN AMPLIFIER
	*A-4388-720-A	(UK).....MOUNTED PCB, MAIN AMPLIFIER
915	*1-535-116-00	TERMINAL
916	*1-626-012-11	PC BOARD, POWER
917	*1-535-139-00	BASE POST 22MM (10MM PITCH) 2P
918	*1-535-476-11	(AEP,WEST GERMANY)...TERMINAL
919	*1-535-118-00	TERMINAL
920	*1-535-115-00	TERMINAL
921	⚠1-555-750-00	(AEP,WEST GERMANY)...CORD, POWER
922	⚠1-556-035-00	(UK).....CORD, POWER
923	*A-4410-602-A	MOUNTED PCB, MAIN, TC
927	*A-4382-334-A	(AEP,UK)...MOUNTED PCB, PRE AMPLIFIER
	*A-4382-335-A	(WEST GERMANY) ....MOUNTED PCB, PRE AMPLIFIER

C41-A	1-162-289-31	CERAMIC	390PF	10%	50V
C41-B	1-162-289-31	CERAMIC	390PF	10%	50V
C42-A	1-136-157-00	FILM	0.022MF	5%	50V
C42-B	1-136-157-00	FILM	0.022MF	5%	50V
C43-A	1-124-282-00	ELECT	22MF	20%	25V
C43-B	1-124-282-00	ELECT	22MF	20%	25V
C44-B	1-162-288-31	CERAMIC	330PF	10%	50V
C45-B	1-136-273-91	FILM	75PF	5%	630V
C47-B	1-162-217-31	CERAMIC	56PF	5%	50V
C48-A	1-162-217-31	CERAMIC	56PF	5%	50V
C48-B	1-162-217-31	CERAMIC	56PF	5%	50V
C61-A	1-162-289-31	CERAMIC	390PF	10%	50V
C61-B	1-162-289-31	CERAMIC	390PF	10%	50V
C62-A	1-136-157-00	FILM	0.022MF	5%	50V
C62-B	1-136-157-00	FILM	0.022MF	5%	50V
C63-A	1-124-282-00	ELECT	22MF	20%	25V
C63-B	1-124-282-00	ELECT	22MF	20%	25V
C64-B	1-162-288-31	CERAMIC	330PF	10%	50V
C65-B	1-136-273-91	FILM	75PF	5%	630V
C67-B	1-162-217-31	CERAMIC	56PF	5%	50V
C68-A	1-162-217-31	CERAMIC	56PF	5%	50V
C68-B	1-162-217-31	CERAMIC	56PF	5%	50V
C81-A	1-126-101-11	ELECT	100MF	20%	16V
C81-B	1-126-101-11	ELECT	100MF	20%	16V
C82-A	1-126-101-11	ELECT	100MF	20%	16V
C82-B	1-126-101-11	ELECT	100MF	20%	16V
C83-B	1-124-499-11	ELECT	1MF	20%	50V
C84-B	1-124-925-11	ELECT	2.2MF	20%	50V
C85-B	1-130-477-00	MYLAR	0.0033MF	5%	50V
C86-B	1-110-199-00	MYLAR	0.0022MF	5%	50V
C87-B	1-110-199-00	MYLAR	0.0022MF	5%	50V
C88-B	1-136-562-11	FILM	0.0082MF	5%	630V
C101	1-136-158-00	FILM	0.027MF	5%	50V
C102	1-161-374-11	CERAMIC	0.0015MF	30%	16V
C103	1-124-499-11	ELECT	1MF	20%	50V
C104	1-124-245-00	ELECT	4.7MF	20%	25V
C105	1-131-346-00	TANTALUM	0.68MF	10%	35V
C106	1-124-462-00	ELECT	10MF	20%	16V
C107	1-124-902-00	ELECT	0.47MF	20%	50V
C108	1-123-875-11	ELECT	10MF	20%	50V
C109	1-123-875-11	ELECT	10MF	20%	50V
C201	1-136-158-00	FILM	0.027MF	5%	50V
C202	1-161-374-11	CERAMIC	0.0015MF	30%	16V
C203	1-124-499-11	ELECT	1MF	20%	50V
C204	1-124-245-00	ELECT	4.7MF	20%	25V
C205	1-131-346-00	TANTALUM	0.68MF	10%	35V
C206	1-124-462-00	ELECT	10MF	20%	16V
C207	1-124-902-00	ELECT	0.47MF	20%	50V
C208	1-123-875-11	ELECT	10MF	20%	50V
C209	1-123-875-11	ELECT	10MF	20%	50V
C303	1-124-443-00	ELECT	100MF	20%	10V
C304	1-124-443-00	ELECT	100MF	20%	10V
C306	1-124-443-00	ELECT	100MF	20%	10V
C307	1-124-443-00	ELECT	100MF	20%	10V
C308	1-124-477-11	ELECT	47MF	20%	16V
C401	1-124-499-11	ELECT	1MF	20%	50V
C402	1-124-499-11	ELECT	1MF	20%	50V
C403	1-124-925-11	ELECT	2.2MF	20%	50V
C404	1-124-927-11	ELECT	4.7MF	20%	50V

Ref.No.	Part No.	Description			
C405	1-124-925-11	ELECT	2.2MF	20%	50V
C406	1-123-875-11	ELECT	10MF	20%	50V
C407	1-124-499-11	ELECT	1MF	20%	50V
C408	1-136-153-00	FILM	0.01MF	5%	50V
C409	1-124-477-11	ELECT	47MF	20%	16V
C411	1-124-927-11	ELECT	4.7MF	20%	50V
C901	1-124-927-11	ELECT	4.7MF	20%	50V
C902	1-123-875-11	ELECT	10MF	20%	50V
C903	1-124-927-11	ELECT	4.7MF	20%	50V
C1001	1-124-925-11	ELECT	2.2MF	20%	50V
C1002	1-162-282-31	CERAMIC	100PF	10%	50V
C1003	1-162-219-31	CERAMIC	68PF	5%	50V
C1004	1-124-477-11	ELECT	47MF	20%	16V
C1005	1-130-480-00	MYLAR	0.0056MF	5%	50V
C1006	1-130-473-00	MYLAR	0.0015MF	5%	50V
C1007	1-124-464-11	ELECT	0.22MF	20%	50V
C1008	1-124-477-11	ELECT	47MF	20%	16V
C1009	1-124-925-11	ELECT	2.2MF	20%	50V
C1010	1-162-286-31	(WEST GERMANY)...CERAMIC	220PF	10%	50V
C1011	1-162-286-31	(WEST GERMANY)...CERAMIC	220PF	10%	50V
C1012	1-123-875-11	ELECT	10MF	20%	50V
C1013	1-162-282-31	CERAMIC	100PF	10%	50V
C1014	1-130-481-00	MYLAR	0.0068MF	5%	50V
C1015	1-162-282-31	CERAMIC	100PF	10%	50V
C1016	1-136-163-00	FILM	0.068MF	5%	50V
C1017	1-124-925-11	ELECT	2.2MF	20%	50V
C1018	1-124-902-00	ELECT	0.47MF	20%	50V
C1019	1-124-477-11	ELECT	47MF	20%	16V
C1020	1-162-286-31	(WEST GERMANY)...CERAMIC	220PF	10%	50V
C1021	1-162-286-31	(WEST GERMANY)...CERAMIC	220PF	10%	50V
C1022	1-124-925-11	ELECT	2.2MF	20%	50V
C1023	1-161-494-00	CERAMIC	0.022MF		25V
C1024	1-124-556-11	ELECT	2200MF	20%	16V
C1025	1-124-908-11	ELECT	22MF	20%	50V
C1026	1-162-294-31	(WEST GERMANY)..CERAMIC	0.001MF	10%	50V
C1040	1-162-282-31	CERAMIC	100PF	10%	50V
C1042	1-130-480-00	MYLAR	0.0056MF	5%	50V
C1051	1-124-925-11	ELECT	2.2MF	20%	50V
C1052	1-162-282-31	CERAMIC	100PF	10%	50V
C1053	1-162-219-31	CERAMIC	68PF	5%	50V
C1054	1-124-477-11	ELECT	47MF	20%	16V
C1055	1-130-480-00	MYLAR	0.0056MF	5%	50V
C1056	1-130-473-00	MYLAR	0.0015MF	5%	50V
C1057	1-124-464-11	ELECT	0.22MF	20%	50V
C1058	1-124-477-11	ELECT	47MF	20%	16V
C1059	1-124-925-11	ELECT	2.2MF	20%	50V
C1060	1-162-286-31	(WEST GERMANY)...CERAMIC	220PF	10%	50V
C1061	1-162-286-31	(WEST GERMANY)...CERAMIC	220PF	10%	50V
C1062	1-123-875-11	ELECT	10MF	20%	50V
C1063	1-162-282-31	CERAMIC	100PF	10%	50V
C1064	1-130-481-00	MYLAR	0.0068MF	5%	50V
C1065	1-162-282-31	CERAMIC	100PF	10%	50V
C1066	1-136-163-00	FILM	0.068MF	5%	50V
C1067	1-124-925-11	ELECT	2.2MF	20%	50V
C1068	1-124-902-00	ELECT	0.47MF	20%	50V
C1069	1-124-477-11	ELECT	47MF	20%	16V
C1070	1-162-286-31	(WEST GERMANY)...CERAMIC	220PF	10%	50V

Ref.No.	Part No.	Description			
C1071	1-162-286-31	(WEST GERMANY)...CERAMIC	220PF	10%	50V
C1072	1-124-925-11	ELECT	2.2MF	20%	50V
C1090	1-162-282-31	CERAMIC	100PF	10%	50V
C1101	1-123-875-11	ELECT	10MF	20%	50V
C1102	1-162-219-31	CERAMIC	68PF	5%	50V
C1103	1-162-219-31	CERAMIC	68PF	5%	50V
C1104	1-123-875-11	ELECT	10MF	20%	50V
C1105	1-124-464-11	ELECT	0.22MF	20%	50V
C1106	1-124-902-00	ELECT	0.47MF	20%	50V
C1107	1-130-480-00	MYLAR	0.0056MF	5%	50V
C1108	1-124-477-11	ELECT	47MF	20%	16V
C1109	1-124-254-00	ELECT	0.68MF	20%	50V
C1110	1-136-160-00	FILM	0.039MF	5%	50V
C1111	1-124-464-11	ELECT	0.22MF	20%	50V
C1112	1-136-154-00	FILM	0.012MF	5%	50V
C1113	1-136-163-00	FILM	0.068MF	5%	50V
C1114	1-130-478-00	MYLAR	0.0039MF	5%	50V
C1115	1-136-157-00	FILM	0.022MF	5%	50V
C1116	1-130-472-00	MYLAR	0.0012MF	5%	50V
C1117	1-161-329-00	CERAMIC	0.0068MF	30%	16V
C1118	1-162-289-31	CERAMIC	390PF	10%	50V
C1119	1-162-282-31	CERAMIC	100PF	10%	50V
C1120	1-123-875-11	ELECT	10MF	20%	50V
C1121	1-123-875-11	ELECT	10MF	20%	50V
C1122	1-123-875-11	ELECT	10MF	20%	50V
C1125	1-162-282-31	CERAMIC	100PF	10%	50V
C1151	1-123-875-11	ELECT	10MF	20%	50V
C1152	1-162-219-31	CERAMIC	68PF	5%	50V
C1153	1-162-219-31	CERAMIC	68PF	5%	50V
C1154	1-123-875-11	ELECT	10MF	20%	50V
C1155	1-124-464-11	ELECT	0.22MF	20%	50V
C1156	1-124-902-00	ELECT	0.47MF	20%	50V
C1157	1-130-480-00	MYLAR	0.0056MF	5%	50V
C1158	1-124-477-11	ELECT	47MF	20%	16V
C1159	1-124-254-00	ELECT	0.68MF	20%	50V
C1160	1-136-160-00	FILM	0.039MF	5%	50V
C1161	1-124-464-11	ELECT	0.22MF	20%	50V
C1162	1-136-154-00	FILM	0.012MF	5%	50V
C1163	1-136-163-00	FILM	0.068MF	5%	50V
C1164	1-130-478-00	MYLAR	0.0039MF	5%	50V
C1165	1-136-157-00	FILM	0.022MF	5%	50V
C1166	1-130-472-00	MYLAR	0.0012MF	5%	50V
C1167	1-161-329-00	CERAMIC	0.0068MF	30%	16V
C1168	1-162-289-31	CERAMIC	390PF	10%	50V
C1169	1-162-282-31	CERAMIC	100PF	10%	50V
C1170	1-123-875-11	ELECT	10MF	20%	50V
C1175	1-162-282-31	CERAMIC	100PF	10%	50V
C1201	1-124-925-11	ELECT	2.2MF	20%	50V
C1202	1-162-282-31	CERAMIC	100PF	10%	50V
C1203	1-124-464-11	ELECT	0.22MF	20%	50V
C1204	1-124-908-11	ELECT	22MF	20%	25V
C1205	1-161-327-00	CERAMIC	0.0033MF	30%	16V
C1206	1-124-477-11	ELECT	47MF	20%	16V
C1207	1-136-165-00	FILM	0.1MF	5%	50V
C1301	1-162-286-31	CERAMIC	220PF	10%	50V
C1302	1-123-875-11	ELECT	10MF	20%	50V
C1304	1-162-286-31	CERAMIC	220PF	10%	50V

Ref.No.	Part No.	Description			
C1305	1-124-444-00	ELECT	220MF	20%	6.3V
C1306	1-124-910-11	ELECT	47MF	20%	50V
C1307	1-124-122-11	ELECT	100MF	20%	50V
C1308	1-136-165-00	FILM	0.1MF	5%	50V
C1309	1-124-908-11	ELECT	22MF	20%	50V
C1310	1-136-163-00	FILM	0.068MF	5%	50V
C1311	1-136-163-00	FILM	0.068MF	5%	50V
C1312	1-124-444-00	ELECT	220MF	20%	6.3V
C1313	1-124-444-00	ELECT	220MF	20%	6.3V
C1314	1-123-875-11	ELECT	10MF	20%	50V
C1315	1-126-101-11	ELECT	100MF	20%	16V
C1316	1-136-163-00	(WEST GERMANY)...FILM	0.068MF	5%	50V
C1317	1-136-163-00	(WEST GERMANY)...FILM	0.068MF	5%	50V
C1318	1-161-379-00	(WEST GERMANY)..CERAMIC	0.01MF	20%	25V
C1319	1-161-377-00	(WEST GERMANY)..CERAMIC	0.0047MF	20%	50V
C1320	1-161-377-00	(WEST GERMANY)..CERAMIC	0.0047MF	20%	50V
C1351	1-162-286-31	CERAMIC	220PF	10%	50V
C1352	1-123-875-11	ELECT	10MF	20%	50V
C1354	1-162-286-31	CERAMIC	220PF	10%	50V
C1355	1-124-444-00	ELECT	220MF	20%	6.3V
C1356	1-124-910-11	ELECT	47MF	20%	50V
C1357	1-124-122-11	ELECT	100MF	20%	50V
C1358	1-136-165-00	FILM	0.1MF	5%	50V
C1360	1-136-163-00	FILM	0.068MF	5%	50V
C1361	1-136-163-00	FILM	0.068MF	5%	50V
C1366	1-136-163-00	(WEST GERMANY)..FILM	0.068MF	5%	50V
C1367	1-136-163-00	(WEST GERMANY)..FILM	0.068MF	5%	50V
C1368	1-161-379-00	(WEST GERMANY)..CERAMIC	0.01MF	20%	25V
C1401	1-161-744-00	CERAMIC	0.01MF		400V
C1402	1-102-355-00	CERAMIC	0.01MF		250V
C1403	1-102-355-00	CERAMIC	0.01MF		250V
C1406	1-126-224-11	ELECT	4700MF	20%	42V
C1407	1-126-224-11	ELECT	4700MF	20%	42V
C1408	1-124-563-11	ELECT	2200MF	20%	25V
C1409	1-124-563-11	ELECT	2200MF	20%	25V
C1410	1-126-101-11	ELECT	100MF	20%	16V
C1411	1-126-101-11	ELECT	100MF	20%	16V
C1412	1-126-103-11	ELECT	470MF	20%	16V
C1413	1-126-103-11	ELECT	470MF	20%	16V
C1415	1-124-556-11	ELECT	2200MF	20%	16V
C1416	1-124-908-11	ELECT	22MF	20%	50V
C1417	1-124-925-11	ELECT	2.2MF	20%	50V
C1418	1-126-103-11	ELECT	470MF	20%	16V
C1419	1-124-912-11	ELECT	330MF	20%	50V
C1421	1-124-122-11	ELECT	100MF	20%	50V
C1423	1-124-908-11	ELECT	22MF	20%	50V
C2001	1-162-294-31	CERAMIC	0.001MF	10%	50V
C2002	1-124-477-11	ELECT	47MF	20%	16V
C2003	1-161-494-00	CERAMIC	0.022MF		25V
C2004	1-102-963-00	CERAMIC	33PF	5%	50V
C2005	1-102-963-00	CERAMIC	33PF	5%	50V
C2006	1-124-925-11	ELECT	2.2MF	20%	50V
C2007	1-124-927-11	ELECT	4.7MF	20%	50V
CF2001	1-567-738-11	VIBRATOR, CERAMIC			
CN301	*1-562-370-00	CONNECTOR, BOARD TO BOARD 18P			
CN302	*1-564-336-51	PIN, CONNECTOR 2P			
CN401	*1-564-337-51	PIN, CONNECTOR 3P			

Ref.No.	Part No.	Description
CN402	*1-564-337-61	PIN, CONNECTOR 3P
CN403	*1-564-342-51	PIN, CONNECTOR 8P
CN404	*1-564-342-61	PIN, CONNECTOR 8P
CN405	*1-564-666-11	PIN, CONNECTOR 10P
CN407	*1-506-503-11	PIN, CONNECTOR 9P
CN408	*1-564-505-11	PLUG, CONNECTOR 2P
CN1001	1-507-788-00	JACK, PIN 4P
CN1002	1-507-788-00	JACK, PIN 4P
CN1201	1-565-117-11	JACK, LARGE TYPE (MIC)
CN1301	1-566-836-11	JACK, LARGE TYPE 1P (HEADPHONES)
CN1302	1-507-807-00	(AEP,WEST GERMANY)...JACK, PIN 2P (SURROUND SPEAKER)
CN1401	*1-566-210-11	(UK)..PIN, CONNECTOR 3P (SYSTEM CONTROL 3)
⚠CN1402	.1-526-751-00	(UK).....OUTLET, AC
⚠CN1402	.1-526-794-11	(AEP,WEST GERMANY)...OUTLET, AC
⚠CN1403	.1-526-794-11	(AEP,WEST GERMANY)...OUTLET, AC
CN1404	1-566-857-11	SOCKET, CONNECTOR 7P (SYSTEM CONTROL 2 TUNER)
CN1405	1-559-831-11	CORD (WITH CONNECTOR) 5P (SYSTEM CONTROL 1)
CNP12-A	*1-564-337-51	PIN, CONNECTOR 3P
CNP12-B	*1-564-337-61	PIN, CONNECTOR 3P
CNP13-A	*1-564-707-11	PIN, CONNECTOR (SMALL TYPE) 5P
CNP13-B	*1-564-707-11	PIN, CONNECTOR (SMALL TYPE) 5P
CNP81-A	*1-564-706-11	PIN, CONNECTOR (SMALL TYPE) 4P
CNP81-B	*1-564-709-11	PIN, CONNECTOR (SMALL TYPE) 7P
CNP82-A	*1-564-339-51	PIN, CONNECTOR 5P
CNP82-B	*1-564-339-61	PIN, CONNECTOR 5P
CNP83-B	*1-564-340-61	PIN, CONNECTOR 6P
CP401	1-233-120-11	COMPOSITION CIRCUIT BLOCK
CP402	1-233-119-11	COMPOSITION CIRCUIT BLOCK
D11-A	8-719-940-76	DIODE 1SS132
D11-B	8-719-940-76	DIODE 1SS132
D81-B	8-719-940-76	DIODE 1SS132
D301	8-719-933-41	DIODE HZS6C3L
D302	8-719-933-41	DIODE HZS6C3L
D303	8-719-933-41	DIODE HZS6C3L
D401	8-719-933-50	DIODE HZS7C2L
D402	8-719-933-50	DIODE HZS7C2L
D403	8-719-200-77	DIODE 10E2N
D404	8-719-200-77	DIODE 10E2N
D405	1-806-937-11	DIODE GMA-01
D406	1-806-937-11	DIODE GMA-01
D407	1-806-937-11	DIODE GMA-01
D408	1-806-937-11	DIODE GMA-01
D501	1-807-689-11	DIODE SLP9070
D502	1-807-689-11	DIODE SLP9070
D503	8-719-969-90	DIODE SLP3070K
D504	8-719-969-90	DIODE SLP3070K
D505	8-719-969-90	DIODE SLP3070K
D506	1-807-689-31	DIODE SLP4070
D507	1-807-689-11	DIODE SLP9070

Note: The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety.
Replace only with part number specified.

Ref.No.	Part No.	Description
D508	8-719-969-90	DIODE SLP3070K
D509	8-719-969-90	DIODE SLP3070K
D510	8-719-969-90	DIODE SLP3070K
D901	1-806-937-11	DIODE GMA-01
D902	1-806-937-11	DIODE GMA-01
D903	8-719-301-60	DIODE SEL2910A-C
D904	8-719-301-60	DIODE SEL2910A-C
D905	8-719-301-60	DIODE SEL2910A-C
D906	8-719-301-60	DIODE SEL2910A-C
D907	8-719-301-60	DIODE SEL2910A-C
D908	8-719-301-60	DIODE SEL2910A-C
D909	8-719-301-60	DIODE SEL2910A-C
D910	8-719-301-60	DIODE SEL2910A-C
D911	8-719-301-60	DIODE SEL2910A-C
D1001	1-806-937-11	DIODE GMA-01
D1002	1-806-937-11	DIODE GMA-01
D1003	1-806-937-11	DIODE GMA-01
D1004	8-719-933-54	DIODE HZS9A2L
D1101	1-806-937-11	DIODE GMA-01
D1102	1-806-937-11	DIODE GMA-01
D1151	1-806-937-11	DIODE GMA-01
D1152	1-806-937-11	DIODE GMA-01
D1301	1-806-937-11	DIODE GMA-01
D1302	1-806-937-11	DIODE GMA-01
D1303	8-719-200-77	DIODE 10E2N
D1304	1-806-937-11	DIODE GMA-01
D1305	1-806-937-11	DIODE GMA-01
D1351	1-806-937-11	DIODE GMA-01
D1401	8-719-302-38	DIODE RBV-602-01
D1402	8-719-200-77	DIODE 10E2N
D1403	8-719-200-77	DIODE 10E2N
D1404	8-719-200-77	DIODE 10E2N
D1405	8-719-200-77	DIODE 10E2N
D1406	8-719-200-77	DIODE 10E2N
D1407	8-719-200-77	DIODE 10E2N
D1408	8-719-200-77	DIODE 10E2N
D1414	8-719-200-77	DIODE 10E2N
D1418	8-719-934-16	DIODE HZS27L
D1419	8-719-160-23	DIODE RD5.1F-B2
D1420	8-719-933-70	DIODE HZS11C2L
D1421	8-719-933-70	DIODE HZS11C2L
D1423	8-719-942-33	DIODE HZ3CLL
D2001	1-807-689-11	DIODE SLP9070
D2002	1-807-689-11	DIODE SLP9070
D2003	8-719-969-90	DIODE SLP3070K
D2004	8-719-969-90	DIODE SLP3070K
D2005	8-719-969-90	DIODE SLP3070K
D2006	8-719-969-90	DIODE SLP3070K
D2007	8-719-969-90	DIODE SLP3070K
F1401⚠	1-532-259-00	FUSE, TIME-LAG (T1.6A)
F1402⚠	1-532-203-00	FUSE, TIME-LAG (T2A)
F1403⚠	1-532-203-00	FUSE, TIME-LAG (T2A)
F1404⚠	1-532-259-00	(AEP,West Germany).FUSE,TIME-LAG (T1.6A)
IC81-A	8-759-111-44	IC UPC4570C-1
IC81-B	8-759-111-44	IC UPC4570C-1

Ref.No.	Part No.	Description
IC301	8-752-031-67	IC CXA1100P
IC302	8-752-032-60	IC CXA1198P
IC303	8-759-240-52	IC TC4052BP
IC304	8-759-601-41	IC M4053BP
IC401	8-752-803-72	IC CXP5048H-115S
IC402	8-759-240-52	IC TC4052BP
IC901	8-759-917-42	IC IR2E31A
IC1001	8-759-820-38	IC LA6458D
IC1002	8-759-800-37	IC LC4066BH
IC1003	8-759-802-52	IC LC7818
IC1004	1-807-943-11	IC LA6458S
IC1101	8-759-820-38	IC LA6458D
IC1102	8-759-602-04	IC M5226P
IC1152	8-759-602-04	IC M5226P
IC1301	8-749-941-52	IC STK4152II
IC1302	8-759-111-68	IC UPC1237HA
IC1401	8-759-604-33	IC M5F7812
IC2001	8-759-820-01	IC LC6527C-3438
IC2002	8-749-920-03	IC GP1U52
L41-B	1-410-780-11	INDUCTOR 27MMH
L61-B	1-410-780-11	INDUCTOR 27MMH
L301	1-408-080-00	INDUCTOR 100UH
L1301	*1-420-872-00	COIL, AIR CORE 1.9UH
L1351	*1-420-872-00	COIL, AIR CORE 1.9UH
LPF101	1-236-087-11	FILTER, LOW PASS
LPF201	1-236-087-11	FILTER, LOW PASS
M1	X-3343-408-1	MOTOR ASSY
M2	X-3343-408-1	MOTOR ASSY
PM1	1-454-456-11	PLUNGER
PM2	1-454-456-11	SOLENOID, PLUNGER
Q11-A	8-729-900-65	TRANSISTOR DTA144ES
Q11-B	8-729-900-65	TRANSISTOR DTA144ES
Q12-A	8-719-939-11	TRANSISTOR GP2S09-B
Q12-B	8-719-939-11	TRANSISTOR GP2S09-B
Q81-B	8-729-802-34	TRANSISTOR 2SD1387
Q82-B	8-729-600-27	TRANSISTOR 2SC634SP
Q83-B	8-729-600-27	TRANSISTOR 2SC634SP
Q101	8-729-806-38	TRANSISTOR 2SC3399
Q103	8-729-806-26	TRANSISTOR 2SC3901
Q104	8-729-806-26	TRANSISTOR 2SC3901
Q201	8-729-806-38	TRANSISTOR 2SC3399
Q203	8-729-806-26	TRANSISTOR 2SC3901
Q204	8-729-806-26	TRANSISTOR 2SC3901
Q301	8-729-806-38	TRANSISTOR 2SC3399
Q302	8-729-806-20	TRANSISTOR 2SA1345
Q401	9-986-159-01	TRANSISTOR 2SA1348
Q402	8-729-801-93	TRANSISTOR 2SD1387
Q403	8-729-801-83	TRANSISTOR 2SB1013
Q404	8-729-801-83	TRANSISTOR 2SB1013
Q405	8-729-806-26	TRANSISTOR 2SC3901
Q406	8-729-801-83	TRANSISTOR 2SB1013
Q407	8-729-801-83	TRANSISTOR 2SB1013
Q408	8-729-806-26	TRANSISTOR 2SC3901
Q411	9-986-159-01	TRANSISTOR 2SA1348
Q412	8-729-806-20	TRANSISTOR 2SA1345

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Replace only with part number specified.

Ref.No.	Part No.	Description
Q413	8-729-806-20	TRANSISTOR 2SA1345
Q414	9-986-159-01	TRANSISTOR 2SA1348
Q415	9-986-159-01	TRANSISTOR 2SA1348
Q1001	8-729-107-98	TRANSISTOR 2SC3622A-L
Q1002	8-729-806-34	TRANSISTOR 2SC3400
Q1003	8-729-806-16	TRANSISTOR 2SA1346
Q1004	8-729-820-10	TRANSISTOR 2SA1317-SU
Q1005	8-729-806-28	TRANSISTOR 2SC3402
Q1006	8-729-178-55	TRANSISTOR 2SC2785-E
Q1051	8-729-107-98	TRANSISTOR 2SC3622A-L
Q1101	8-729-224-63	TRANSISTOR 2SK246-BL
Q1102	8-729-178-55	TRANSISTOR 2SC2785-E
Q1103	9-986-159-01	TRANSISTOR 2SA1348
Q1104	8-729-801-83	TRANSISTOR 2SB1013
Q1105	8-729-801-93	TRANSISTOR 2SD1387
Q1151	8-729-224-63	TRANSISTOR 2SK246-BL
Q1152	8-729-178-55	TRANSISTOR 2SC2785-E
Q1201	8-729-178-55	TRANSISTOR 2SC2785-E
Q1301	8-729-108-06	TRANSISTOR 2SC1841
Q1303	8-729-806-16	TRANSISTOR 2SA1346
Q1351	8-729-108-06	TRANSISTOR 2SC1841
Q1401	8-729-804-17	TRANSISTOR 2SD1666
Q1402	8-729-178-55	TRANSISTOR 2SC2785-E
Q1403	8-729-804-67	TRANSISTOR 2SB1133-R
Q1404	8-729-820-10	TRANSISTOR 2SA1317-SU
Q1407	8-729-804-17	TRANSISTOR 2SD1666-R
Q1408	8-729-178-55	TRANSISTOR 2SC2785-E
Q1409	8-729-178-55	TRANSISTOR 2SC2785-E
Q1410	8-729-804-67	TRANSISTOR 2SB1133-R
Q2001	8-729-178-55	TRANSISTOR 2SC2785-E
Q2009	8-729-178-55	TRANSISTOR 2SC2785-E
Q2010	8-729-178-55	TRANSISTOR 2SC2785-E
R11-B	1-215-424-00	CARBON 1.3K 5% 1/4W
R12-B	1-249-414-11	CARBON 560 5% 1/4W
R13-B	1-215-408-00	CARBON 300 5% 1/4W
R14-A	1-249-408-11	CARBON 180 5% 1/4W
R14-B	1-249-408-11	CARBON 180 5% 1/4W
R17-A	1-249-437-11	CARBON 47K 5% 1/4W
R17-B	1-249-437-11	CARBON 47K 5% 1/4W
R18-A	1-249-437-11	CARBON 47K 5% 1/4W
R18-B	1-249-437-11	CARBON 47K 5% 1/4W
R41-A	1-247-881-00	CARBON 120K 5% 1/4W
R41-B	1-247-881-00	CARBON 120K 5% 1/4W
R42-A	1-249-405-11	CARBON 100 5% 1/4W
R42-B	1-249-405-11	CARBON 100 5% 1/4W
R43-A	1-215-472-00	CARBON 130K 5% 1/4W
R43-B	1-215-472-00	CARBON 130K 5% 1/4W
R44-A	1-249-426-11	CARBON 5.6K 5% 1/4W
R44-B	1-249-426-11	CARBON 5.6K 5% 1/4W
R45-B	1-249-430-11	CARBON 12K 5% 1/4W

Ref.No.	Part No.	Description
R61-A	1-247-881-00	CARBON 120K 5% 1/4W
R61-B	1-247-881-00	CARBON 120K 5% 1/4W
R62-A	1-249-405-11	CARBON 100 5% 1/4W
R62-B	1-249-405-11	CARBON 100 5% 1/4W
R63-A	1-215-472-00	CARBON 130K 5% 1/4W
R63-B	1-215-472-00	CARBON 130K 5% 1/4W
R64-A	1-249-426-11	CARBON 5.6K 5% 1/4W
R64-B	1-249-426-11	CARBON 5.6K 5% 1/4W
R65-B	1-249-430-11	CARBON 12K 5% 1/4W
R81-A	1-249-409-11	CARBON 220 5% 1/4W
R81-B	1-249-409-11	CARBON 220 5% 1/4W
R82-A	1-249-409-11	CARBON 220 5% 1/4W
R82-B	1-249-409-11	CARBON 220 5% 1/4W
R83-B	1-249-429-11	CARBON 10K 5% 1/4W
R84-B⚠	1-212-853-00	FUSIBLE 6.8 5% 1/4W F
R85-B	1-249-434-11	CARBON 27K 5% 1/4W
R86-B	1-249-434-11	CARBON 27K 5% 1/4W
R101	1-249-420-11	CARBON 1.8K 5% 1/4W
R102	1-249-422-11	CARBON 2.7K 5% 1/4W
R103	1-249-441-11	CARBON 100K 5% 1/4W
R106	1-215-462-00	CARBON 51K 5% 1/4W
R107	1-249-423-11	CARBON 3.3K 5% 1/4W
R109	1-249-428-11	CARBON 8.2K 5% 1/4W
R110	1-249-417-11	CARBON 1K 5% 1/4W
R112	1-215-434-00	CARBON 3.6K 5% 1/4W
R113	1-249-429-11	CARBON 10K 5% 1/4W
R114	1-249-426-11	CARBON 5.6K 5% 1/4W
R115	1-249-425-11	CARBON 4.7K 5% 1/4W
R201	1-249-420-11	CARBON 1.8K 5% 1/4W
R202	1-249-422-11	CARBON 2.7K 5% 1/4W
R203	1-249-441-11	CARBON 100K 5% 1/4W
R206	1-215-462-00	CARBON 51K 5% 1/4W
R207	1-249-423-11	CARBON 3.3K 5% 1/4W
R209	1-249-428-11	CARBON 8.2K 5% 1/4W
R210	1-249-417-11	CARBON 1K 5% 1/4W
R212	1-215-434-00	CARBON 3.6K 5% 1/4W
R213	1-249-429-11	CARBON 10K 5% 1/4W
R214	1-249-426-11	CARBON 5.6K 5% 1/4W
R215	1-249-425-11	CARBON 4.7K 5% 1/4W
R301	1-249-437-11	CARBON 47K 5% 1/4W
R302	1-215-460-00	METAL 43K 1% 1/6W
R303	1-249-437-11	CARBON 47K 5% 1/4W
R304	1-249-437-11	CARBON 47K 5% 1/4W
R305	1-247-704-11	CARBON 220 5% 1/4W
R306	1-247-707-11	CARBON 390 5% 1/4W
R307	1-249-429-11	CARBON 10K 5% 1/4W
R308	1-249-437-11	CARBON 47K 5% 1/4W
R309	1-215-430-00	CARBON 2.4K 5% 1/4W
R310	1-215-434-00	CARBON 3.6K 5% 1/4W
R311	1-215-454-00	CARBON 24K 5% 1/4W
R312	1-249-417-11	CARBON 1K 5% 1/4W
R314	1-247-742-11	CARBON 180 5% 1/2W
R315	1-247-742-11	CARBON 180 5% 1/2W

Note: The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety.
Replace only with part number specified.

Ref.No.	Part No.	Description			
R351	1-215-462-00	CARBON	51K	5%	1/4W
R352	1-215-468-00	CARBON	91K	5%	1/4W
R353	1-249-435-11	CARBON	33K	5%	1/4W
R354	1-215-468-00	CARBON	91K	5%	1/4W
R355	1-247-881-00	CARBON	120K	5%	1/4W
R356	1-249-437-11	CARBON	47K	5%	1/4W
R357	1-215-452-00	CARBON	20K	5%	1/4W
R358	1-215-470-00	CARBON	110K	5%	1/4W
R359	1-249-436-11	CARBON	39K	5%	1/4W
R360	1-215-466-00	CARBON	75K	5%	1/4W
R361	1-215-458-00	CARBON	36K	5%	1/4W
R362	1-215-468-00	CARBON	91K	5%	1/4W
R363	1-249-440-11	CARBON	82K	5%	1/4W
R364	1-215-474-00	CARBON	160K	5%	1/4W
R365	1-249-437-11	CARBON	47K	5%	1/4W
R366	1-215-468-00	CARBON	91K	5%	1/4W
R367	1-247-881-00	CARBON	120K	5%	1/4W
R368	1-215-466-00	CARBON	75K	5%	1/4W
R369	1-249-436-11	CARBON	39K	5%	1/4W
R370	1-215-476-00	CARBON	200K	5%	1/4W
R371	1-215-462-00	CARBON	51K	5%	1/4W
R372	1-215-466-00	CARBON	75K	5%	1/4W
R373	1-215-458-00	CARBON	36K	5%	1/4W
R374	1-249-440-11	CARBON	82K	5%	1/4W
R375	1-249-439-11	CARBON	68K	5%	1/4W
R401	1-249-417-11	CARBON	1K	5%	1/4W
R402	1-249-417-11	CARBON	1K	5%	1/4W
R403	1-249-425-11	CARBON	4.7K	5%	1/4W
R404	1-249-417-11	CARBON	1K	5%	1/4W
R405	1-249-425-11	CARBON	4.7K	5%	1/4W
R406	1-249-421-11	CARBON	2.2K	5%	1/4W
R407	1-249-425-11	CARBON	4.7K	5%	1/4W
R408	1-247-887-00	CARBON	220K	5%	1/4W
R409	1-249-438-11	CARBON	56K	5%	1/4W
R410	1-249-417-11	CARBON	1K	5%	1/4W
R411	1-249-425-11	CARBON	4.7K	5%	1/4W
R412	1-249-421-11	CARBON	2.2K	5%	1/4W
R413	1-249-425-11	CARBON	4.7K	5%	1/4W
R414	1-247-887-00	CARBON	220K	5%	1/4W
R415	1-249-438-11	CARBON	56K	5%	1/4W
R416	1-249-433-11	CARBON	22K	5%	1/4W
R417	1-249-425-11	CARBON	4.7K	5%	1/4W
R418	1-249-425-11	CARBON	4.7K	5%	1/4W
R420	1-249-437-11	CARBON	47K	5%	1/4W
R421	1-249-437-11	CARBON	47K	5%	1/4W
R422	1-249-433-11	CARBON	22K	5%	1/4W
R430	1-249-411-11	CARBON	330	5%	1/4W
R431	1-249-411-11	CARBON	330	5%	1/4W
R432	1-249-407-11	CARBON	150	5%	1/4W
R433	1-249-407-11	CARBON	150	5%	1/4W
R434	1-249-407-11	CARBON	150	5%	1/4W
R435	1-249-407-11	CARBON	150	5%	1/4W
R436	1-249-410-11	CARBON	270	5%	1/4W
R437	1-249-407-11	CARBON	150	5%	1/4W
R438	1-249-407-11	CARBON	150	5%	1/4W
R439	1-249-407-11	CARBON	150	5%	1/4W
R440	1-249-437-11	CARBON	47K	5%	1/4W

Ref.No.	Part No.	Description			
R442	1-249-425-11	CARBON	4.7K	5%	1/4W
R443	1-249-417-11	CARBON	1K	5%	1/4W
R444	1-249-417-11	CARBON	1K	5%	1/4W
R445	1-249-417-11	CARBON	1K	5%	1/4W
R446	1-249-417-11	CARBON	1K	5%	1/4W
R447	1-249-433-11	CARBON	22K	5%	1/4W
R448	1-249-421-11	CARBON	2.2K	5%	1/4W
R451	1-249-417-11	CARBON	1K	5%	1/4W
R452	1-249-417-11	CARBON	1K	5%	1/4W
R453	1-249-417-11	CARBON	1K	5%	1/4W
R501	1-215-432-00	CARBON	3K	5%	1/4W
R503	1-249-420-11	CARBON	1.8K	5%	1/4W
R504	1-249-418-11	CARBON	1.2K	5%	1/4W
R505	1-249-420-11	CARBON	1.8K	5%	1/4W
R506	1-249-418-11	CARBON	1.2K	5%	1/4W
R507	1-249-423-11	CARBON	3.3K	5%	1/4W
R508	1-249-420-11	CARBON	1.8K	5%	1/4W
R509	1-249-418-11	CARBON	1.2K	5%	1/4W
R511	1-249-423-11	CARBON	3.3K	5%	1/4W
R512	1-249-420-11	CARBON	1.8K	5%	1/4W
R513	1-249-418-11	CARBON	1.2K	5%	1/4W
R514	1-249-420-11	CARBON	1.8K	5%	1/4W
R515	1-249-418-11	CARBON	1.2K	5%	1/4W
R901	1-249-429-11	CARBON	10K	5%	1/4W
R902	1-249-435-11	CARBON	33K	5%	1/4W
R903	1-249-441-11	CARBON	100K	5%	1/4W
R904	1-249-413-11	CARBON	470	5%	1/4W
R905	1-249-429-11	CARBON	10K	5%	1/4W
R906	1-247-749-11	CARBON	560	5%	1/2W
R951	1-249-429-11	CARBON	10K	5%	1/4W
R1001	1-249-441-11	CARBON	100K	5%	1/4W
R1002	1-249-417-11	CARBON	1K	5%	1/4W
R1003	1-249-441-11	CARBON	100K	5%	1/4W
R1004	1-249-416-11	CARBON	820	5%	1/4W
R1005	1-215-487-00	CARBON	560K	5%	1/4W
R1006	1-249-437-11	CARBON	47K	5%	1/4W
R1007	1-249-441-11	CARBON	100K	5%	1/4W
R1008	1-249-409-11	CARBON	220	5%	1/4W
R1009	1-249-409-11	CARBON	220	5%	1/4W
R1010	1-249-417-11	CARBON	1K	5%	1/4W
R1011	1-249-417-11	(WEST GERMANY)...CARBON	1K	5%	1/4W
R1012	1-215-493-00	CARBON	1M	5%	1/4W
R1013	1-249-413-11	CARBON	470	5%	1/4W
R1014	1-215-487-00	CARBON	560K	5%	1/4W
R1015	1-249-417-11	CARBON	1K	5%	1/4W
R1017	1-249-417-11	CARBON	1K	5%	1/4W
R1020	1-215-493-00	CARBON	1M	5%	1/4W
R1021	1-215-487-00	CARBON	560K	5%	1/4W
R1022	1-215-487-00	CARBON	560K	5%	1/4W
R1023	1-215-487-00	CARBON	560K	5%	1/4W
R1024	1-249-441-11	CARBON	100K	5%	1/4W
R1025	1-249-437-11	CARBON	47K	5%	1/4W
R1026	1-249-429-11	CARBON	10K	5%	1/4W
R1027	1-249-441-11	CARBON	100K	5%	1/4W
R1028	1-249-441-11	CARBON	100K	5%	1/4W
R1029	1-249-441-11	CARBON	100K	5%	1/4W
R1030	1-249-429-11	CARBON	10K	5%	1/4W

Ref.No.	Part No.	Description			
R1031	1-249-409-11	CARBON	220	5%	1/4W
R1032	1-249-421-11	CARBON	2.2K	5%	1/4W
R1033	1-249-433-11	CARBON	22K	5%	1/4W
R1034	1-249-431-11	CARBON	15K	5%	1/4W
R1040	1-249-433-11	CARBON	22K	5%	1/4W
R1041	1-249-433-11	CARBON	22K	5%	1/4W
R1042	1-249-433-11	CARBON	22K	5%	1/4W
R1043	1-249-433-11	CARBON	22K	5%	1/4W
R1044	1-215-491-00	CARBON	820K	5%	1/4W
R1045	1-249-433-11	CARBON	22K	5%	1/4W
R1046	1-249-425-11	CARBON	4.7K	5%	1/4W
R1051	1-249-441-11	CARBON	100K	5%	1/4W
R1052	1-249-417-11	CARBON	1K	5%	1/4W
R1053	1-249-441-11	CARBON	100K	5%	1/4W
R1054	1-249-416-11	CARBON	820	5%	1/4W
R1055	1-215-487-00	CARBON	560K	5%	1/4W
R1056	1-249-437-11	CARBON	47K	5%	1/4W
R1057	1-249-441-11	CARBON	100K	5%	1/4W
R1058	1-249-409-11	CARBON	220	5%	1/4W
R1059	1-249-409-11	CARBON	220	5%	1/4W
R1060	1-249-417-11	CARBON	1K	5%	1/4W
R1061	1-249-417-11	(WEST GERMANY)...CARBON	1K	5%	1/4W
R1062	1-215-493-00	CARBON	1M	5%	1/4W
R1063	1-249-413-11	CARBON	470	5%	1/4W
R1064	1-215-487-00	CARBON	560K	5%	1/4W
R1065	1-249-417-11	CARBON	1K	5%	1/4W
R1067	1-249-417-11	CARBON	1K	5%	1/4W
R1070	1-215-493-00	CARBON	1M	5%	1/4W
R1071	1-215-487-00	CARBON	560K	5%	1/4W
R1072	1-215-487-00	CARBON	560K	5%	1/4W
R1073	1-215-487-00	CARBON	560K	5%	1/4W
R1074	1-249-441-11	CARBON	100K	5%	1/4W
R1075	1-249-437-11	CARBON	47K	5%	1/4W
R1076	1-249-429-11	CARBON	10K	5%	1/4W
R1077	1-249-441-11	CARBON	100K	5%	1/4W
R1078	1-249-441-11	CARBON	100K	5%	1/4W
R1079	1-249-441-11	CARBON	100K	5%	1/4W
R1080	1-249-429-11	CARBON	10K	5%	1/4W
R1081	1-249-409-11	CARBON	220	5%	1/4W
R1082	1-249-421-11	CARBON	2.2K	5%	1/4W
R1083	1-249-433-11	CARBON	22K	5%	1/4W
R1090	1-249-429-11	CARBON	10K	5%	1/4W
R1091	1-249-429-11	CARBON	10K	5%	1/4W
R1092	1-249-441-11	CARBON	100K	5%	1/4W
R1093	1-249-417-11	CARBON	1K	5%	1/4W
R1094	1-249-433-11	CARBON	22K	5%	1/4W
R1101	1-249-441-11	CARBON	100K	5%	1/4W
R1102	1-249-417-11	CARBON	1K	5%	1/4W
R1103	1-249-441-11	CARBON	100K	5%	1/4W
R1104	1-249-425-11	CARBON	4.7K	5%	1/4W
R1105	1-249-425-11	CARBON	4.7K	5%	1/4W
R1106	1-249-441-11	CARBON	100K	5%	1/4W
R1107	1-215-493-00	CARBON	1M	5%	1/4W
R1108	1-249-428-11	CARBON	8.2K	5%	1/4W
R1109	1-249-433-11	CARBON	22K	5%	1/4W
R1110	1-249-422-11	CARBON	2.7K	5%	1/4W
R1111	1-247-895-00	CARBON	470K	5%	1/4W

Ref.No.	Part No.	Description			
R1112	1-249-427-11	CARBON	6.8K	5%	1/4W
R1113	1-249-412-11	CARBON	390	5%	1/4W
R1114	1-249-401-11	CARBON	47	5%	1/4W
R1115	1-249-429-11	CARBON	10K	5%	1/4W
R1118	1-249-425-11	(AEP,WEST GERMANY) ...CARBON	4.7K	5%	1/4W
R1120	1-249-421-11	CARBON	2.2K	5%	1/4W
R1121	1-249-433-11	CARBON	22K	5%	1/4W
R1122	1-249-433-11	CARBON	22K	5%	1/4W
R1123	1-247-732-11	CARBON	27	5%	1/2W
R1124	1-247-732-11	CARBON	27	5%	1/2W
R1125	1-249-425-11	CARBON	4.7K	5%	1/4W
R1126	1-249-425-11	CARBON	4.7K	5%	1/4W
R1127	1-247-727-11	CARBON	10	5%	1/2W
R1128	1-247-727-11	CARBON	10	5%	1/2W
R1151	1-249-441-11	CARBON	100K	5%	1/4W
R1152	1-249-417-11	CARBON	1K	5%	1/4W
R1153	1-249-441-11	CARBON	100K	5%	1/4W
R1154	1-249-425-11	CARBON	4.7K	5%	1/4W
R1155	1-249-425-11	CARBON	4.7K	5%	1/4W
R1156	1-249-441-11	CARBON	100K	5%	1/4W
R1157	1-215-493-00	CARBON	1M	5%	1/4W
R1158	1-249-428-11	CARBON	8.2K	5%	1/4W
R1159	1-249-433-11	CARBON	22K	5%	1/4W
R1160	1-249-422-11	CARBON	2.7K	5%	1/4W
R1161	1-247-895-00	CARBON	470K	5%	1/4W
R1162	1-249-427-11	CARBON	6.8K	5%	1/4W
R1163	1-249-412-11	CARBON	390	5%	1/4W
R1164	1-249-401-11	CARBON	47	5%	1/4W
R1170	1-249-421-11	CARBON	2.2K	5%	1/4W
R1201	1-249-441-11	CARBON	100K	5%	1/4W
R1202	1-249-441-11	CARBON	100K	5%	1/4W
R1203	1-249-417-11	CARBON	1K	5%	1/4W
R1204	1-249-426-11	CARBON	5.6K	5%	1/4W
R1205	1-249-431-11	CARBON	15K	5%	1/4W
R1206	1-249-441-11	CARBON	100K	5%	1/4W
R1207	1-249-421-11	CARBON	2.2K	5%	1/4W
R1208	1-249-417-11	CARBON	1K	5%	1/4W
R1303	1-249-417-11	CARBON	1K	5%	1/4W
R1304	1-249-438-11	CARBON	56K	5%	1/4W
R1305	1-249-414-11	CARBON	560	5%	1/4W
R1306	1-249-438-11	CARBON	56K	5%	1/4W
R1307	1-247-756-11	CARBON	2.2K	5%	1/2W
R1308	1-247-756-11	CARBON	2.2K	5%	1/2W
R1309⚠	1-212-881-11	FUSIBLE	100	5%	1/4W
R1310	1-247-752-11	CARBON	1K	5%	1/2W
R1311	1-247-752-11	CARBON	1K	5%	1/2W
R1312	1-249-417-11	CARBON	1K	5%	1/4W
R1313	1-249-431-11	CARBON	15K	5%	1/4W
R1314	1-217-156-00	METAL PLATE	0.22		
R1315	1-249-441-11	CARBON	100K	5%	1/4W
R1316	1-247-727-11	CARBON	10	5%	1/2W
R1317	1-247-727-11	CARBON	10	5%	1/2W
R1318	1-249-438-11	CARBON	56K	5%	1/4W
R1319	1-249-429-11	CARBON	10K	5%	1/4W
R1320	1-249-441-11	CARBON	100K	5%	1/4W
R1321	1-249-430-11	CARBON	12K	5%	1/4W
R1322	1-249-437-11	CARBON	47K	5%	1/4W

Note: The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety.
Replace only with part number specified.

Ref.No.	Part No.	Description			
R1323	1-247-764-11	CARBON	10K	5%	1/2W
R1324⚠	1-215-890-11	METAL OXIDE	470	5%	2W F
R1325	1-247-745-11	CARBON	330	5%	1/2W
R1326	1-247-727-11	(WEST GERMANY)...CARBON			10 5% 1/2W
R1353	1-249-417-11	CARBON	1K	5%	1/4W
R1354	1-249-438-11	CARBON	56K	5%	1/4W
R1355	1-249-414-11	CARBON	560	5%	1/4W
R1356	1-249-438-11	CARBON	56K	5%	1/4W
R1357	1-247-756-11	CARBON	2.2K	5%	1/2W
R1358	1-247-756-11	CARBON	2.2K	5%	1/2W
R1359⚠	1-212-881-11	FUSIBLE	100	5%	1/4W F
R1362	1-249-417-11	CARBON	1K	5%	1/4W
R1363	1-249-431-11	CARBON	15K	5%	1/4W
R1364	1-217-156-00	RES, METAL PLATE 0.22			
R1365	1-249-441-11	CARBON	100K	5%	1/4W
R1366	1-247-727-11	CARBON	10	5%	1/2W
R1367	1-247-727-11	CARBON	10	5%	1/2W
R1368	1-249-437-11	CARBON	47K	5%	1/4W
R1375	1-247-745-11	CARBON	330	5%	1/2W
R1376	1-247-727-11	(WEST GERMANY)...CARBON			10 5% 1/2W
R1401	1-249-418-11	CARBON	1.2K	5%	1/4W
R1402	1-249-418-11	CARBON	1.2K	5%	1/4W
R1403	1-249-428-11	CARBON	8.2K	5%	1/4W
R1405	1-249-421-11	CARBON	2.2K	5%	1/4W
R1406	1-249-421-11	CARBON	2.2K	5%	1/4W
R1407	1-249-421-11	CARBON	2.2K	5%	1/4W
R1408	1-249-411-11	CARBON	330	5%	1/4W
R1409	1-249-419-11	CARBON	1.5K	5%	1/4W
R1410	1-249-422-11	CARBON	2.7K	5%	1/4W
R1412	1-249-426-11	CARBON	5.6K	5%	1/4W
R1413⚠	1-212-934-00	FUSIBLE	1	5%	1/2W F
R1414⚠	1-212-857-00	FUSIBLE	10	5%	1/4W F
R2001	1-247-746-11	CARBON	390	5%	1/2W
R2002	1-247-749-11	CARBON	560	5%	1/2W
R2003	1-247-749-11	CARBON	560	5%	1/2W
R2004	1-247-749-11	CARBON	560	5%	1/2W
R2005	1-247-749-11	CARBON	560	5%	1/2W
R2006	1-247-749-11	CARBON	560	5%	1/2W
R2007	1-249-429-11	CARBON	10K	5%	1/4W
R2010	1-249-417-11	CARBON	1K	5%	1/4W
R2011	1-249-417-11	CARBON	1K	5%	1/4W
R2022	1-249-425-11	CARBON	4.7K	5%	1/4W
R2023	1-249-429-11	CARBON	10K	5%	1/4W
R2024	1-249-441-11	CARBON	100K	5%	1/4W
RV41-A	1-228-989-00	RES, ADJ, CARBON 470			
RV41-B	1-228-989-00	RES, ADJ, CARBON 470			
RV42-B	1-230-499-11	RES, ADJ, CARBON 100K			
RV61-A	1-228-989-00	RES, ADJ, CARBON 470			
RV61-B	1-228-989-00	RES, ADJ, CARBON 470			
RV62-B	1-230-499-11	RES, ADJ, CARBON 100K			

Ref.No.	Part No.	Description
RV101	1-228-994-00	RES, ADJ, CARBON 10K
RV201	1-228-994-00	RES, ADJ, CARBON 10K
RV1101	1-238-065-21	RES, VAR, SLIDE 250K/250K (100Hz)
RV1102	1-238-065-21	RES, VAR, SLIDE 250K/250K (330Hz)
RV1103	1-238-065-21	RES, VAR, SLIDE 250K/250K (1kHz)
RV1104	1-238-065-21	RES, VAR, SLIDE 250K/250K (3.3kHz)
RV1105	1-238-065-21	RES, VAR, SLIDE 250K/250K (10kHz)
RV1106	1-238-101-21	RES, VAR, SLIDE 100K (BALANCE)
RV1107	1-237-884-11	RES, VAR, CARBON 100K/100K (VOLUME)
RV1201	1-238-100-11	RES, VAR, CARBON 100K/100K (MIC LEVEL)
RY81-B	1-515-614-11	RELAY
RY1301	1-515-501-00	RELAY
S11-A	1-571-281-21	SWITCH, LEAF (HALF)
S11-B	1-571-281-21	SWITCH, LEAF (HALF)
S12-B	1-571-281-21	SWITCH, LEAF (REC (A))
S13-B	1-571-281-21	SWITCH, LEAF (REC (B))
S14-A	1-571-281-21	SWITCH, LEAF (CrO2)
S14-B	1-571-281-21	SWITCH, LEAF (CrO2)
S501	1-554-303-21	SWITCH, KEY BOARD (▷(DECK A))
S502	1-554-303-21	SWITCH, KEY BOARD (◁(DECK A))
S503	1-554-303-21	SWITCH, KEY BOARD (◀◀(DECK A))
S504	1-554-303-21	SWITCH, KEY BOARD (▶▶(DECK A))
S505	1-554-303-21	SWITCH, KEY BOARD (■(DECK A))
S506	1-554-303-21	SWITCH, KEY BOARD (●REC MUTE)
S507	1-554-303-21	SWITCH, KEY BOARD (▷(DECK B))
S508	1-554-303-21	SWITCH, KEY BOARD (◁(DECK B))
S509	1-554-303-21	SWITCH, KEY BOARD (❚❚ PAUSE)
S511	1-554-303-21	SWITCH, KEY BOARD (REC)
S512	1-554-303-21	SWITCH, KEY BOARD (◀◀(DECK B))
S513	1-554-303-21	SWITCH, KEY BOARD (▶▶(DECK B))
S514	1-554-303-21	SWITCH, KEY BOARD (■(DECK B))
S515	1-554-303-21	SWITCH, KEY BOARD (DUBBING HIGH SPEED (DECK B))
S516	1-554-303-21	SWITCH, KEY BOARD (DUBBING NORMAL SPEED (DECK B))
S517	1-570-837-11	SWITCH, SLIDE (DIRECTION)
S519	1-570-849-11	SWITCH, SLIDE (DOLBY NR)
S1101	1-571-292-11	SWITCH, PUSH (1 KEY)(DOL)
S1102	1-571-292-11	(AEP,WEST GERMANY)...SWITCH, PUSH (1 KEY)(SURROUND)
S1401⚠	1-554-920-11	SWITCH, PUSH (AC POWER)(1 KEY)
S2001	1-554-303-21	SWITCH, KEY BOARD (WM)
S2002	1-554-303-21	SWITCH, KEY BOARD (PHONO)
S2003	1-554-303-21	SWITCH, KEY BOARD (TUNER)
S2004	1-554-303-21	SWITCH, KEY BOARD (CD)
S2005	1-554-303-21	SWITCH, KEY BOARD (TAPE)
S2006	1-554-303-21	SWITCH, KEY BOARD (VIDEO/DAT)
T81-B	1-433-331-11	TRANSFORMER, BIAS OSCILLATION
T1401⚠	1-449-219-11	TRANSFORMER, POWER
TM1301	1-536-705-00	TERMINAL BOARD (SP)
X401	1-567-772-11	VIBRATOR, CERAMIC (4.19MHz)

ACCESSORY & PACKING MATERIAL

Part No.	Description
*4-908-854-01	CUSHION
4-921-934-01	SHEET,PROTECTION

Note: The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety. Replace only with part number specified.

Sony Corporation
Audio Group

English
88B0455-1
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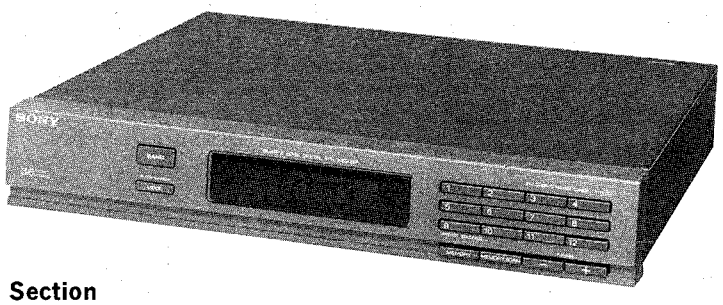
Published by A/V Engineering Service Dept.

ST-D50L

SERVICE MANUAL

AEP Model
UK Model



This Set The Tuner Section In XO-D50

SPECIFICATIONS

Tuner section

Syslem — MF slereo, FM/AM Superheterodyne tuner

FM tuner section

Tuning range — 87.5 to 108 MHz
Antenna terminals — 75 ohms unbalanced

MW/LW tuner section

	MW	LW
Tuning range	522 to 1,611 kHz (Italian model) 531 to 1,602 kHz (Other European countries)	144 to 288 kHz (Italian model) 153 to 281 kHz (Other European countries)
Anlenna	AM Loop antenna, External antenna terminal	
Intermediate frequency	450 kHz	

Dimensions — Approx. 355×70×310 mm (Wh/d) ($14\times2^{11}/_{16}\times12^{1}/_{4}$ inches) Iricl. projecting parts and contiols
Weight — Apprtx. 1.9 kg (4 ld 3 oz)

SAFETY-RELATED COMPONENT WARNING!!

COMPONENTS IDENTIFIED BY MARK ⚠ OR DOTTED LINE WITH MARK ⚠ ON THE SCHEMATIC DIAGRAMS AND IN THE PARTS LIST ARE CRITICAL TO SAFE OPERATION. REPLACE THESE COMPONENTS WITH SONY PARTS WHOSE PART NUMBERS APPEAR AS SHOWN IN THIS MANUAL OR IN SUPPLEMENTS PUBLISHED BY SONY.

MICROFILM

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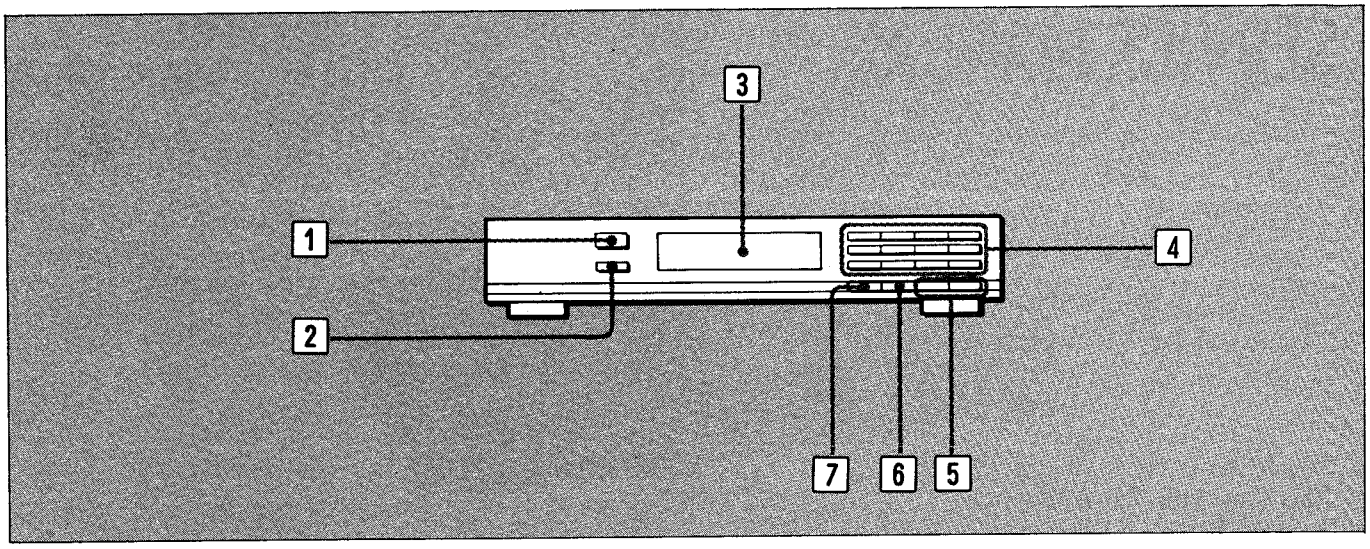
FM STEREO/FM/MW/LW TUNER

SONY®

SECTION 1
GENERAL

1-1. PARTS IDENTIFICATION



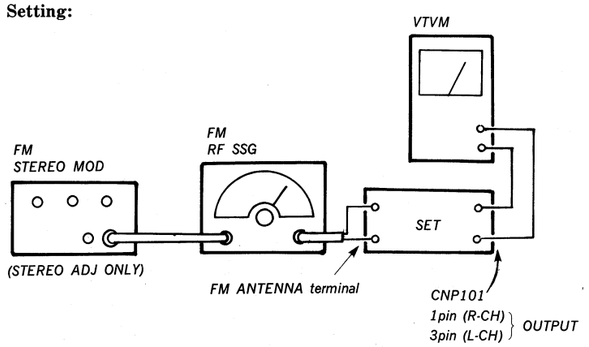
1 BAND selector
ST-D50L: FM, MW, LW
ST-D50S: FM, MW, SW1, SW2
2 AUTO/MANUAL mode selector
3 Band/frequency display
4 PRESET buttons
5 TUNING +/– buttons (station selector)
6 MEMORY SCAN button
7 MEMORY button

SECTION 2
ELECTRICAL ADJUSTMENTS

- Repeat the procedures in each adjustment several times, and the frequency coverage and tracking adjustments should be finally done by the trimmer capacitors.

2-1. FM SECTION ADJUSTMENT

Setting:



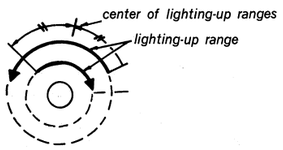
Carrier frequency	*: 98MHz*
Modulation	*: 1kHz*
Deviation	*: 40kHz (MONO only)*
Output level	*: 66dBμ (at NULL/STEREO Adjustment)*
	: 25dBμ (at TUNED Adjustment)
Stereo MOD setting	
Sub channel	*: 38kHz*
Deviation	*: 16.25kHz*
Pilot signal	*: 19kHz*
Deviation	*: 7.5kHz*
Modulation	*: 1kHz—16.25kHz deviation*

1. Discriminator Alignment (NULL check)

1. Push the TUNING (+, −) button for 98MHz.
2. Adjust T251 for 0V reading on the VTVM.
   test point ≒ TP101

2. Tuned Lighting-on Adjustment

1. Puch the TUNING (+, −) button for 98MHz.
2. Tune RV103 clockwise or counterclockwise and memorize the lighting-up range of tuned indicator.
3. Adjust RV103 at the center of the lighting-up range of both turns as shown below.



3. Stereo Separation Adjustment

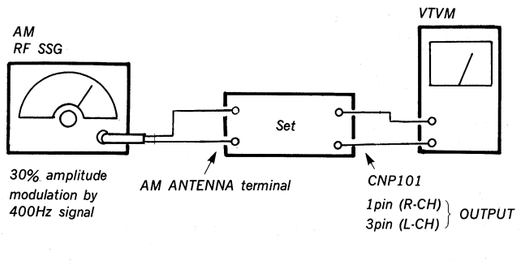
FM stereo signal generator output channel	VTVM connection	VTVM reading (dB)
L-CH	L-CH	Ⓐ
R-CH	L-CH	Ⓑ Adjust RV101 for minimum reading.
R-CH	R-CH	Ⓒ
L-CH	R-CH	Ⓓ Adjust RV101 for minimum reading.

L-CH Stereo separation : Ⓐ—Ⓑ
R-CH Stereo separation : Ⓒ—Ⓓ

The separation of both channels should be equal.
Specification : 35dB

2-2. AM SECTION ADJUSTMENTS

Setting:



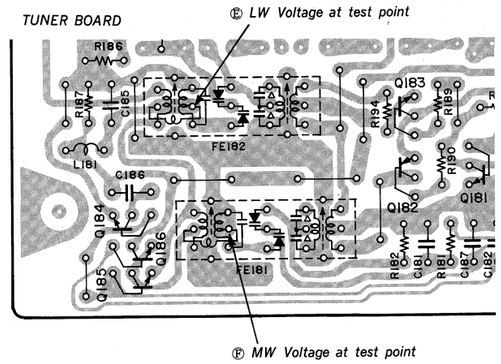
1. LW Frequency Coverage Adjustment

Frequency display in set	AEP, UK, WG model	153kHz	281kHz
	IT model	144kHz	288kHz
Adjustment part		FE182(OSC)	
Voltage at test point		VT Ⓔ 1V±0.2V	

2. MW Frequency Coverage Adjustment

Frequency display in set	AEP, UK, WG model	531kHz	1602kHz
	IT model	522kHz	1611kHz
Adjustment part		FE181(OSC)	
Voltage test point		VT Ⓕ ①V±0.2V	

Adjustment Location:



3. LW Tracking Adjustment

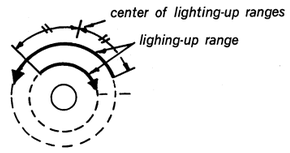
Frequency display in set	AEP, UK, WG model	153kHz
	IT model	144kHz
Adjustment part	FE182 (ANT)	
Adjustment for a maximum reading on VTVM.		

4. MW Tracking Adjustment

Frequency display in set	AEP, UK, WG model	531kHz
	IT model	522kHz
Adjustment part	FE181 (ANT)	
Adjust for a maximum reading on VTVM.		

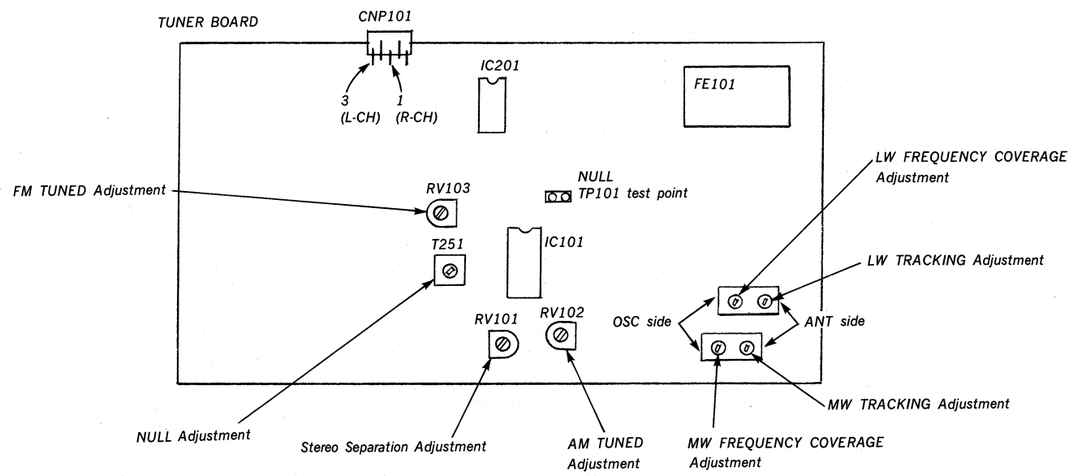
5. Tuned Lighting-on Adjustment

1. Push the TUNING (+, −) button for LW: 281kHz (AEP/UK, WG model) or 288kHz (IT model).
2. Turn RV102 clockwise or counter clockwise and memorize the lighting-up range of tuned indicator.
3. Adjust RV102 at the center of the lighting-up range of both turns as shown below.



At SSG OUTPUT 68dBμ

Adjustment Location:

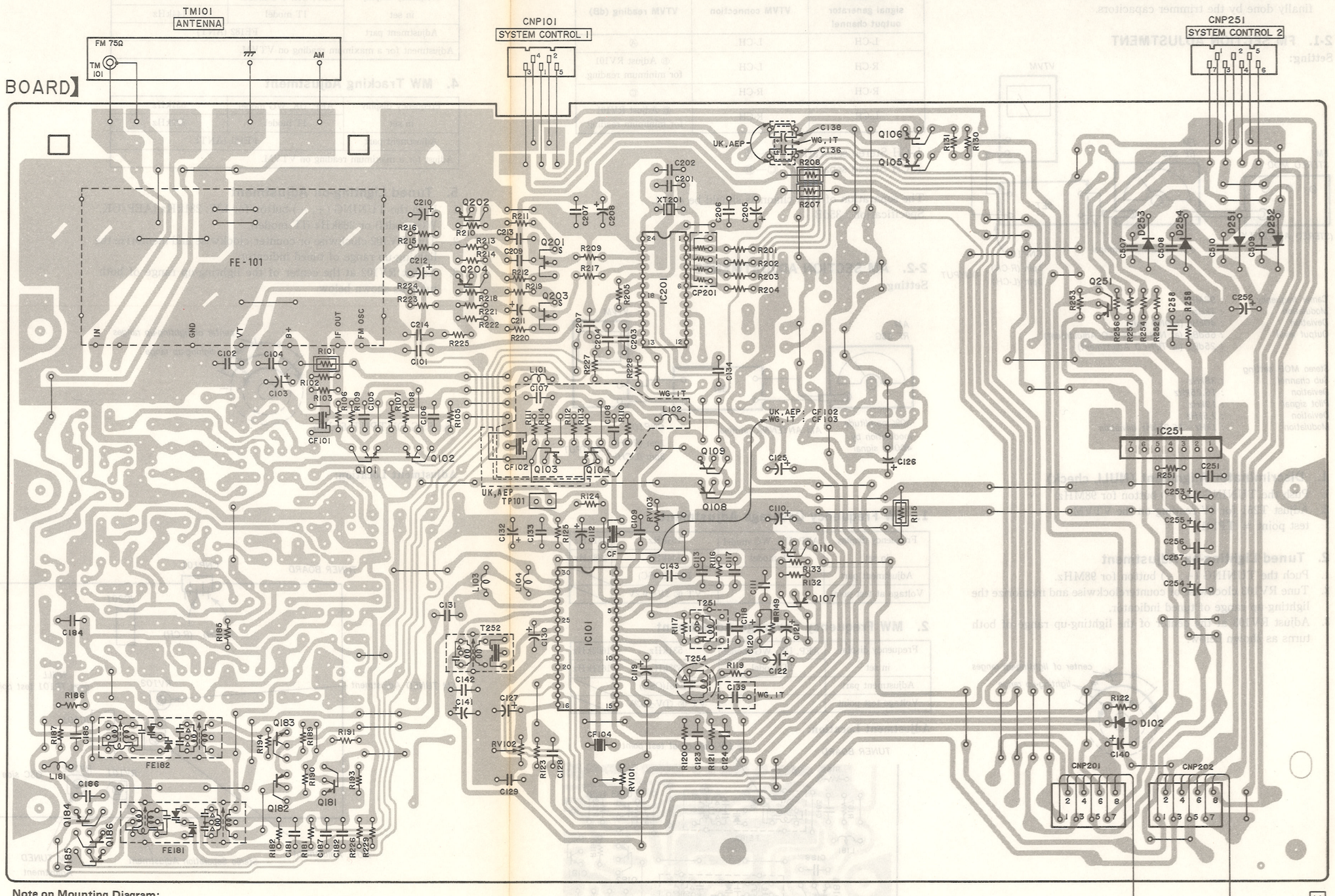


● Semiconductor Location

Ref. No.	Location
D102	F-10
D251	C-11
D252	C-11
D253	C-10
D254	C-10
IC101	F-6
IC201	C-6
IC251	C-10
Q101	D-4
Q102	D-5
Q103	D-5
Q104	D-6
Q105	B-8
Q106	B-8
Q107	E-7
Q108	E-7
Q109	D-7
Q110	E-7
Q181	G-4
Q182	G-3
Q183	F-3
Q184	G-2
Q185	G-2
Q186	G-2
Q201	C-5
Q202	B-5
Q203	C-5
Q204	C-5
Q251	C-10

3-1. PRINTED WIRING BOARD—TUNER SECTION— ● Refer to page 10 for Semiconductor Lead Layouts.

【TUNER BOARD】



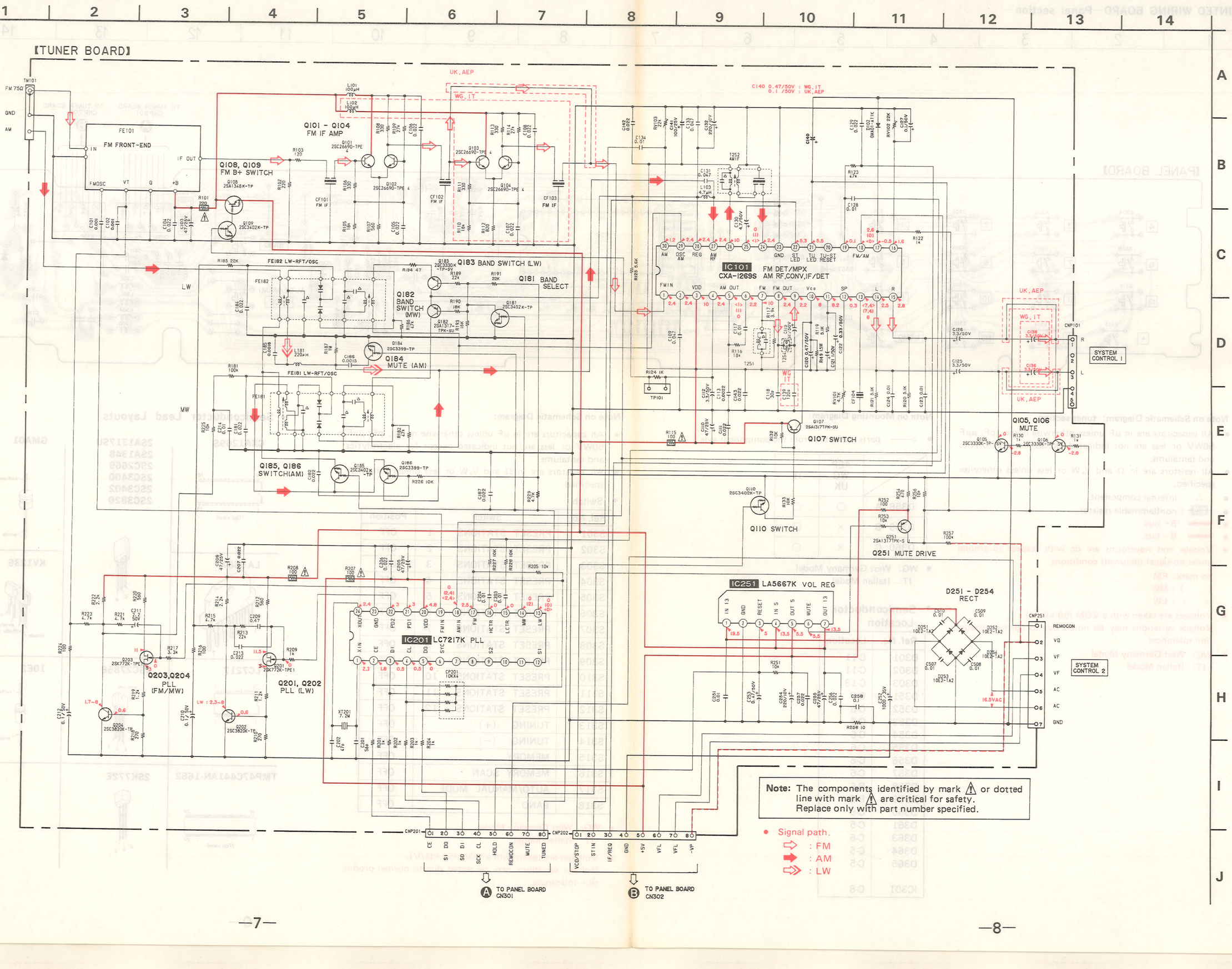
Note on Mounting Diagram:

- ○—— : parts extracted from the component side.
- WG: West Germany Model
  IT: Italian Model

3-2. SCHEMFITIC DIAGRAM—TUNER SECTION—

● Refer to page 9 for notes.

【TUNER BOARD】

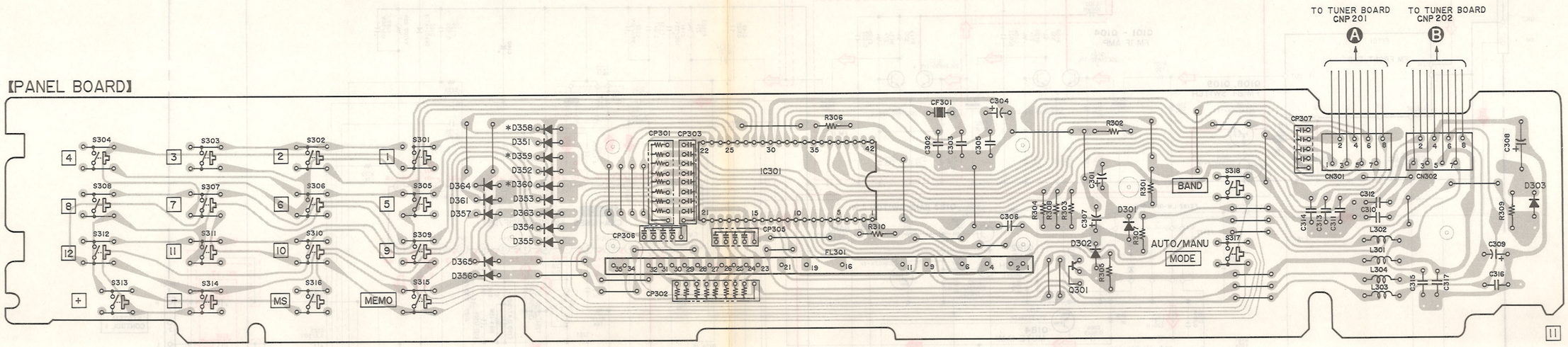


Note: The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety. Replace only with part number specified.

● Signal path.
⇨ : FM
➡ : AM
⇨ : LW

3-3. PRINTED WIRING BOARD—Panel section—

【PANEL BOARD】



Note on Schematic Diagram: tuner section

- All capacitors are in μF unless otherwise noted. pF: μμF 50WV or less are not indicated except for electrolytics and tantalums.
- All resistors are in Ω and 1/4 W or less unless otherwise specified.
- △ : internal component.
- : nonflammable resistor.
- : B+ bus.
- : B− bus.
- Voltage and waveforms are dc with respect to ground under no-signal (detuned) conditions.
  no mark : FM
  ( ) : MW
  〈 〉 : LW
- Voltages are taken with a VOM (50 kΩ/V).
  Voltage variations may be noted due to normal production tolerances.
- WG: West Germany Model
  IT: Italian Model

Note on Mounting Diagram:

- ○—— : parts extracted from the component side.

	AEP WG UK	IT
D358 A	○	○
D359 B	×	○
D360 C	×	○

- WG: West Germany Model
  IT: Italian Model

- **Semiconductor Location**

Ref. No.	Location
D301	C-11
D302	C-11
D303	C-13
D351	B-6
D352	C-6
D353	C-6
D354	C-6
D355	C-6
D356	C-6
D357	C-6
D358	B-6
D359	B-6
D360	C-6
D361	C-5
D363	C-6
D364	C-5
D365	C-5
IC301	C-8

Note on Schematic Diagram:

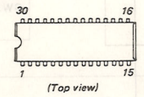
- All capacitors are in μF unless otherwise noted. pF: μμF 50WV or less are not indicated except for electrolytics and tantalums.
- All resistors are in Ω and 1/4 W or less unless otherwise specified.
- Switch

Ref. No.	Switch	Position
S301	PRESET STATIONS 1	OFF
S302	PRESET STATIONS 2	OFF
S303	PRESET STATIONS 3	OFF
S304	PRESET STATIONS 4	OFF
S305	PRESET STATIONS 5	OFF
S306	PRESET STATIONS 6	OFF
S307	PRESET STATIONS 7	OFF
S308	PRESET STATIONS 9	OFF
S309	PRESET STATIONS 9	OFF
S310	PRESET STATIONS 10	OFF
S311	PRESET STATIONS 11	OFF
S312	PRESET STATIONS 12	OFF
S313	TUNING (+)	OFF
S314	TUNING (−)	OFF
S315	MEMORY	OFF
S316	MEMORY SCAN	OFF
S317	AUTO/MANUAL MODE	OFF
S318	BAND	OFF

- WG: West Germany Model
  IT: Italian Model
- Voltages are taken with a VOM (50 kΩ/V).
  Voltage variations may be noted due to normal production tolerances.

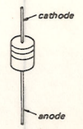
- **Semiconductor Lead Layouts**

CXA1269S

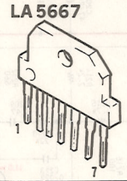


2SA1317SU
2SA1348
2SC2669
2SC3400
2SC3402
2SC3820

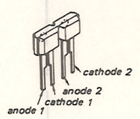
GMA01



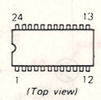
LA5667



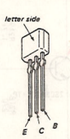
KV1236



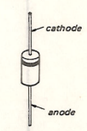
LC7217



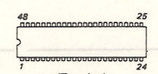
2SC2785E



10E2



TMP47C441AN-1662



2SK772E

3-4. SCHEMATIC DIAGRAM—Panel section—

【PANEL BOARD】

IC301 TMP47C441AN-1661
DISPLAY/TUNING

IC301
TMP47C441AN-SOX-489

FL301

CN301
CE
SI
SO
SCK
HOLD
REMOCON
MUTE
TUNED

TO TUNER BOARD CNP201

CN302
VCO/STOP
STIN
IF REQ
GND
+5V
VFL
VFL
-VP

TO TUNER BOARD CNP202

CP307 220PX4
CP306 220PX4
CP302 100KX8
CP301 100KX8
CP303 220PX8
CP305 220PX4

CF301

Q301 2SC3400K -TP

Q301 2SC3400K-TP
SWITCH

D351-361, D364, 365 } GMA01-AT1K

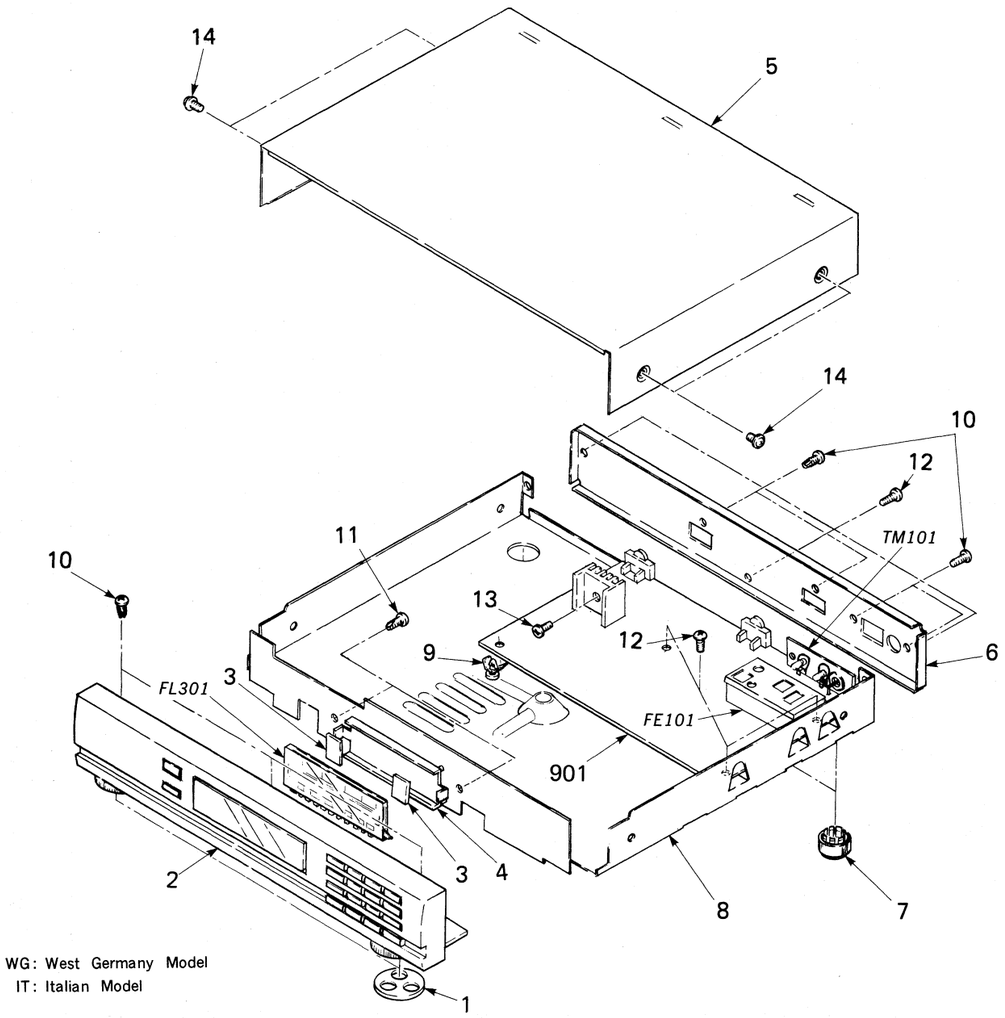
	AEP WG UK	E2 E3 EA3	IT
D358	○	×	○
D359	×	×	○
D360	×	○	○

D361 SIGIN
D364 IF+50K
D365 IF-50K

SECTION 4
EXPLODED VIEW

NOTE:

- The mechanical parts with no reference number in the exploded views are not supplied.
- The construction parts of an assembled part are indicated with a collation number in the remark column.
- Items marked "★" are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.
- Due to standardization, parts with part number suffix -XX and -X may be different from the parts specified in the components used on the set.
- Color Indication of Appearance Parts Example:
  (RED) . . . KNOB, BALANCE (WHITE)
  ↑ ↑
  Cabinet's Color Parts Color



WG: West Germany Model
IT: Italian Model

Ref.No	Part No.	Description	Remark
1	4-921-906-01	FELT	
2	X-4924-516-1	(AEP,UK, IT) ....PANEL ASSY, FRONT	
	X-4924-518-1	(WG) ....PANEL ASSY, FRONT	
3	*4-921-941-11	CUSHION (FL)	
4	*4-923-103-01	HOLDER, FL TUBE	
5	4-924-514-31	(AEP, UK, IT) ....CASE	
	4-924-514-21	(WG) ....CASE	
6	*4-924-502-01	(AEP, UK, IT) ....PANEL, BACK	
	*4-924-502-11	(WG) ....PANEL, BACK	
7	X-4921-901-1	FOOT ASSY	
8	*4-921-903-41	CHASSIS	
9	*4-835-627-00	FASTENER, (A)	
10	7-685-646-79	SCREW +BVTP 3×8 TYPE N-S	
11	7-685-134-11	SCREW +PTP 2.6×8	
12	7-682-548-04	SCREW +BVTT 3×8 (S)	
13	7-685-647-79	SCREW BVTP 3×10 TYPE2 IT-3	
14	3-704-366-01	SCREW (CASE) (M3X8)	
901	*A-4351-635-A	(AEP, UK) ....MOUNTED PCB, TUNER	
	*A-4351-636-A	(WG, IT) ....MOUNTED PCB, TUNER	
FE101	1-463-963-11	FRONT END (FM 3 GANG)	
FL301	1-519-453-11	INDICATOR TUBE, FLUORESCENT	
TM101	*1-537-138-21	TERMINAL BOARD (ANT)	

SECTION 5
ELECTRICAL PARTS LIST

NOTE:

- Due to standardization, replacements in the parts list may be different from the parts specified in the diagrams or the components used on the set.
- Items marked "★" are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.
- If there are two or more same circuits in a set such as a stereophonic machine, only typical circuit parts may be indicated and capacitors and resistors in other same circuits may be omitted.

CAPACITORS:
MF: μF, PF: μμF.

RESISTORS
- All resistors are in ohms.
- F: nonflammable

COILS
- MMH: mH, UH: μH

SEMICONDUCTORS
In each case, U: μ, for example:
UA...: μA..., UPA...: μPA..., UPC...: μPC, UPD...: μPD...

The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety.
Replace only with part number specified.

WG: West Germany Model
IT: Italian Model

Ref.No	Part No.	Description			Remark
901	*A-4351-635-A	(AEP, UK) ....MOUNTED PCB, TUNER			
901	*A-4351-636-A	(WG, IT) ....MOUNTED PCB, TUNER			
		CAPACITOR			
C101	1-102-074-00	CERAMIC	0.001MF	10% 50V	
C102	1-102-074-00	CERAMIC	0.001MF	10% 50V	
C103	1-124-477-11	ELECT	47MF	20% 25V	
C104	1-101-005-00	CERAMIC	0.022MF	50V	
C105	1-101-005-00	CERAMIC	0.022MF	50V	
C106	1-101-005-00	CERAMIC	0.022MF	50V	
C107	1-101-005-00	(WG, IT)....CERAMIC	0.022MF	50V	
C108	1-101-005-00	(WG, IT)....CERAMIC	0.022MF	50V	
C109	1-101-006-00	CERAMIC	0.047MF	50V	
C110	1-124-477-11	ELECT	47MF	20% 25V	
C111	1-101-005-00	CERAMIC	0.022MF	50V	
C112	1-123-382-00	ELECT	3.3MF	20% 50V	
C113	1-101-004-00	CERAMIC	0.01MF	50V	
C117	1-130-483-00	MYLAR	0.01MF	5% 50V	
C118	1-102-962-00	CERAMIC	30PF	5% 50V	
C119	1-123-875-11	ELECT	10MF	20% 50V	
C120	1-124-902-00	ELECT	0.47MF	20% 50V	
C121	1-124-499-11	ELECT	1MF	20% 50V	
C122	1-124-252-00	ELECT	0.33MF	20% 50V	
C123	1-101-004-00	CERAMIC	0.01MF	50V	
C124	1-101-004-00	CERAMIC	0.01MF	50V	
C125	1-123-382-00	ELECT	3.3MF	20% 50V	
C126	1-123-382-00	ELECT	3.3MF	20% 50V	
C127	1-124-463-00	ELECT	0.1MF	20% 50V	
C128	1-101-004-00	CERAMIC	0.01MF	50V	
C129	1-101-005-00	CERAMIC	0.022MF	50V	
C130	1-124-927-11	ELECT	4.7MF	20% 50V	
C131	1-101-006-00	CERAMIC	0.047MF	50V	
C132	1-124-444-00	ELECT	220MF	20% 10V	
C133	1-101-006-00	CERAMIC	0.047MF	50V	
C134	1-101-004-00	CERAMIC	0.01MF	50V	
C136	1-123-382-00	(WG, IT)....ELECT	3.3MF	20% 50V	
C138	1-123-382-00	(WG, IT)....ELECT	3.3MF	20% 50V	
C139	1-162-283-31	(WG, IT)....CERAMIC	120PF	10% 50V	
C140	1-124-463-00	ELECT	0.1MF	20% 50V	
C140	1-124-902-00	(WG, IT)....ELECT	0.47MF	20% 50V	
C141	1-124-478-11	ELECT	100MF	20% 25V	
C142	1-101-005-00	CERAMIC	0.022MF	50V	
C143	1-101-005-00	CERAMIC	0.022MF	50V	
C181	1-101-005-00	CERAMIC	0.022MF	50V	
C182	1-101-005-00	CERAMIC	0.022MF	50V	
C184	1-101-005-00	CERAMIC	0.022MF	50V	
C185	1-102-120-00	CERAMIC	0.0018MF	10% 50V	
C186	1-161-041-00	CERAMIC	0.0015MF	10% 25V	
C187	1-101-005-00	CERAMIC	0.022MF	50V	
C201	1-101-884-00	CERAMIC	56PF	5% 50V	
C202	1-101-880-00	CERAMIC	47PF	5% 50V	
C203	1-101-004-00	CERAMIC	0.01MF	50V	
C204	1-101-004-00	CERAMIC	0.01MF	50V	
C205	1-124-477-11	ELECT	47MF	20% 25V	
C206	1-101-005-00	CERAMIC	0.022MF	50V	
C207	1-101-005-00	CERAMIC	0.022MF	50V	
C208	1-124-477-11	ELECT	47MF	20% 25V	
C209	1-136-173-00	FILM	0.47MF	5% 50V	
C210	1-124-463-00	ELECT	0.1MF	20% 50V	
C211	1-124-925-11	ELECT	2.2MF	20% 50V	
C212	1-124-463-00	ELECT	0.1MF	20% 50V	
C213	1-101-005-00	CERAMIC	0.022MF	50V	
C214	1-101-004-00	CERAMIC	0.01MF	50V	
C215	1-102-973-00	CERAMIC	100PF	5% 50V	
C251	1-101-004-00	CERAMIC	0.01MF	50V	
C252	1-126-105-11	ELECT	1000MF	20% 35V	
C253	1-124-902-00	ELECT	0.47MF	20% 50V	
C254	1-124-444-00	ELECT	220MF	20% 10V	
C255	1-124-477-11	ELECT	47MF	20% 25V	
C256	1-101-005-00	CERAMIC	0.022MF	50V	
C257	1-101-005-00	CERAMIC	0.022MF	50V	
C258	1-136-165-00	FILM	0.1MF	5% 50V	
C301	1-124-463-00	ELECT	0.1MF	20% 50V	
C302	1-162-056-00	CERAMIC	33PF	5% 50V	
C303	1-162-056-00	CERAMIC	33PF	5% 50V	
C304	1-124-463-00	ELECT	0.1MF	20% 50V	
C305	1-161-379-00	CERAMIC	0.01MF	30% 16V	
C306	1-161-379-00	CERAMIC	0.01MF	30% 16V	
C307	1-124-910-11	ELECT	47MF	20% 50V	
C308	1-125-486-11		220MF	5.5V	
C309	1-124-910-11	ELECT	47MF	20% 50V	
C310	1-101-005-00	CERAMIC	0.022MF	50V	
C311	1-101-005-00	CERAMIC	0.022MF	50V	
C312	1-101-005-00	CERAMIC	0.022MF	50V	
C313	1-101-005-00	CERAMIC	0.022MF	50V	
C314	1-101-005-00	CERAMIC	0.022MF	50V	
C315	1-101-005-00	CERAMIC	0.022MF	50V	
C316	1-101-005-00	CERAMIC	0.022MF	50V	
C317	1-101-005-00	CERAMIC	0.022MF	50V	
C507	1-101-004-00	CERAMIC	0.01MF	50V	
C508	1-101-004-00	CERAMIC	0.01MF	50V	
C509	1-101-004-00	CERAMIC	0.01MF	50V	
C510	1-101-004-00	CERAMIC	0.01MF	50V	
CF101	1-567-389-11	FILTER, CERAMIC			
CF102	1-567-389-11	FILTER, CERAMIC			
CF103	1-567-389-11	(WG, IT)....FILER, CERAMIC			
CF104	1-577-075-11	OSCILLATOR, CERAMIC			
CF301	1-577-029-11	VIBRATOR, CERAMIC			
CNP101	*1-566-856-11	SOCKET, CONNECTOR 5P			
CNP201	*1-566-168-11	HOUSING, CONNECTOR 8P			
CNP202	*1-566-168-11	HOUSING, CONNECTOR 8P			
CNP251	1-566-857-11	SOCKET, CONNECTOR 7P			
CNP301	*1-566-168-11	HOUSING, CONNECTOR 8P			

Ref.No	Part No.	Description	Remark
CNP302	*1-566-168-11	HOUSING, CONNECTOR 8P	
CP201	1-233-125-11	COMPOSITION CIRCUIT BLOCK	
CP301	1-233-140-11	COMPOSITION CIRCUIT BLOCK	
CP302	1-233-140-11	COMPOSITION CIRCUIT BLOCK	
CP303	1-233-151-	COMPOSITION CIRCUIT BLOCK	
CP305	1-233-150-	COMPOSITION CIRCUIT BLOCK	
CP306	1-233-150-	COMPOSITION CIRCUIT BLOCK	
CP307	1-233-150-	COMPOSITION CIRCUIT BLOCK	
D102	1-806-937-11	DIODE GMA01	
D251	8-719-200-02	DIODE 10E2	
D252	8-719-200-02	DIODE 10E2	
D253	8-719-200-02	DIODE 10E2	
D254	8-719-200-02	DIODE 10E2	
D301	1-806-937-11	DIODE GMA01	
D302	1-806-937-11	DIODE GMA01	
D303	1-806-937-11	DIODE GMA01	
D351	1-806-937-11	DIODE GMA01	
D352	1-806-937-11	DIODE GMA01	
D353	1-806-937-11	DIODE GMA01	
D354	1-806-937-11	DIODE GMA01	
D355	1-806-937-11	DIODE GMA01	
D356	1-806-937-11	DIODE GMA01	
D357	1-806-937-11	DIODE GMA01	
D358	1-806-937-11	DIODE GMA01	
D359	1-806-937-11	(IT)....DIODE GMA01	
D360	1-806-937-11	(IT)....DIODE GMA01	
D361	1-806-937-11	DIODE GMA01	
D363	1-806-937-11	DIODE GMA01	
D364	1-806-937-11	DIODE GMA01	
D365	1-806-937-11	DIODE GMA01	
FE101	1-463-963-11	FRONT END (FM 3 GANG)	
FE181	1-235-936-11	ENCAPSULATED COMPONENT	
FE182	1-236-178-11	RF BLOCK, LW	
FL301	1-519-453-11	INDICATOR TUBE, FLUORESCENT	
IC101	8-759-805-50	IC CXA1269S	
IC201	8-759-820-10	IC LC7217	
IC251	8-759-820-09	IC LA5667	
IC301	8-759-230-49	IC TMP47C441AN-1662	
L101	1-410-564-41	INDUCTOR	
L102	1-410-564-41	(WG, IT)....INDUCTOR 100UH	
L103	1-408-920-00	INDUCTOR	
L181	1-410-568-21	INDUCTOR	
L301	1-410-564-21	INDUCTOR	
L302	1-410-564-21	INDUCTOR	
L303	1-410-564-21	INDUCTOR	
L304	1-410-564-21	INDUCTOR	
Q101	8-729-266-93	TRANSISTOR 2SC2669	
Q102	8-729-266-93	TRANSISTOR 2SC2669	
Q103	8-729-266-93	(WG, IT)....TRANSISTOR 2SC2669	
Q104	8-729-266-93	(WG, IT)....TRANSISTOR 2SC2669	
Q105	8-729-178-55	TRANSISTOR 2SC2785-E	
Q106	8-729-178-55	TRANSISTOR 2SC2785-E	
Q107	8-729-178-55	TRANSISTOR 2SC2785-E	
Q108	9-986-159-01	TRANSISTOR 2SA1348	
Q109	8-729-806-28	TRANSISTOR 2SC3402	
Q110	8-729-806-28	TRANSISTOR 2SC3402	
Q181	8-729-806-28	TRANSISTOR 2SC3402	
Q182	8-729-820-10	TRANSISTOR 2SA1317-SU	
Q183	8-729-178-55	TRANSISTOR 2SC2785-E	
Q184	8-729-806-28	TRANSISTOR 2SC3402	
Q185	8-729-806-28	TRANSISTOR 2SC3402	
Q186	8-729-806-28	TRANSISTOR 2SC3402	

Ref.No	Part No.	Description	Remark
Q201	8-729-820-12	TRANSISTOR 2SK772-E	
Q202	8-729-820-13	TRANSISTOR 2SC3820	
Q203	8-729-820-12	TRANSISTOR 2SK772-E	
Q204	8-729-820-13	TRANSISTOR 2SC3820	
Q251	8-729-820-10	TRANSISTOR 2SA1317	
Q301	8-729-806-34	TRANSISTOR 2SC3400	

RESISTOR

R101	⚠1-247-704-11	CARBON	220	5%	1/4W	F
R103	1-249-406-11	CARBON	120	5%	1/4W	
R105	1-249-432-11	CARBON	18K	5%	1/4W	
R106	1-249-411-11	CARBON	330	5%	1/4W	
R107	1-249-414-11	CARBON	560	5%	1/4W	
R108	1-249-411-11	CARBON	330	5%	1/4W	
R109	1-249-434-11	CARBON	27K	5%	1/4W	
R110	1-249-432-11	(WG,IT)....CARBON	18K	5%	1/4W	
R111	1-249-411-11	(WG,IT)....CARBON	330	5%	1/4W	
R112	1-249-416-11	(WG,IT)....CARBON	820	5%	1/4W	
R113	1-249-411-11	(WG,IT)....CARBON	330	5%	1/4W	
R114	1-249-434-11	(WG,IT)....CARBON	27K	5%	1/4W	
R115	⚠1-247-700-11	CARBON	100	5%	1/4W	F
R116	1-249-432-11	CARBON	18K	5%	1/4W	
R117	1-249-424-11	CARBON	3.9K	5%	1/4W	
R119	1-215-438-00	CARBON	5.1K	5%	1/4W	
R120	1-215-438-00	CARBON	5.1K	5%	1/4W	
R121	1-215-438-00	CARBON	5.1K	5%	1/4W	
R122	1-249-417-11	CARBON	1K	5%	1/4W	
R123	1-249-437-11	CARBON	47K	5%	1/4W	
R124	1-249-417-11	CARBON	1K	5%	1/4W	
R125	1-249-426-11	CARBON	5.6K	5%	1/4W	
R130	1-249-417-11	CARBON	1K	5%	1/4W	
R131	1-249-417-11	CARBON	1K	5%	1/4W	
R132	1-249-429-11	CARBON	10K	5%	1/4W	
R133	1-249-429-11	CARBON	10K	5%	1/4W	
R149	1-249-747-	CARBON	1.5M	5%	1/4W	
R181	1-249-441-11	CARBON	100K	5%	1/4W	
R182	1-249-437-11	CARBON	47K	5%	1/4W	
R185	1-249-433-11	CARBON	22K	5%	1/4W	
R186	1-249-437-11	CARBON	47K	5%	1/4W	
R187	1-215-493-00	CARBON	1M	5%	1/4W	
R189	1-249-433-11	CARBON	22K	5%	1/4W	
R190	1-249-432-11	CARBON	18K	5%	1/4W	
R191	1-249-433-11	CARBON	22K	5%	1/4W	
R193	1-249-431-11	CARBON	15K	5%	1/4W	
R194	1-249-401-11	CARBON	47	5%	1/4W	
R201	1-249-417-11	CARBON	1K	5%	1/4W	
R202	1-249-417-11	CARBON	1K	5%	1/4W	
R203	1-249-417-11	CARBON	1K	5%	1/4W	
R204	1-249-417-11	CARBON	1K	5%	1/4W	
R205	1-249-425-11	CARBON	4.7K	5%	1/4W	
R207	⚠1-247-696-11	CARBON	47	5%	1/4W	F
R208	⚠1-247-700-11	CARBON	100	5%	1/4W	F
R209	1-249-425-11	CARBON	4.7K	5%	1/4W	
R210	1-249-410-11	CARBON	270	5%	1/4W	
R211	1-249-418-11	CARBON	1.2K	5%	1/4W	
R212	1-249-414-11	CARBON	560	5%	1/4W	
R213	1-249-433-11	CARBON	22K	5%	1/4W	
R214	1-249-421-11	CARBON	2.2K	5%	1/4W	
R215	1-249-425-11	CARBON	4.7K	5%	1/4W	
R216	1-249-405-11	CARBON	100	5%	1/4W	
R217	1-249-423-11	CARBON	3.3K	5%	1/4W	
R218	1-249-410-11	CARBON	270	5%	1/4W	
R219	1-249-418-11	CARBON	1.2K	5%	1/4W	
R220	1-249-414-11	CARBON	560	5%	1/4W	
R221	1-249-425-11	CARBON	4.7K	5%	1/4W	

Note: The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety. Replace only with part number specified.

Ref.No	Part No.	Description			Remark
R222	1-249-421-11	CARBON	2.2K	5%	1/4W
R223	1-249-425-11	CARBON	4.7K	5%	1/4W
R224	1-249-405-11	CARBON	100	5%	1/4W
R225	1-249-429-11	CARBON	10K	5%	1/4W
R226	1-249-429-11	CARBON	10K	5%	1/4W
R227	1-249-429-11	CARBON	10K	5%	1/4W
R228	1-249-429-11	CARBON	10K	5%	1/4W
R229	1-249-425-11	CARBON	4.7K	5%	1/4W
R251	1-249-429-11	CARBON	10K	5%	1/4W
R252	1-249-405-11	CARBON	100	5%	1/4W
R253	1-249-429-11	CARBON	10K	5%	1/4W
R254	1-249-413-11	CARBON	470	5%	1/4W
R256	1-249-429-11	CARBON	10K	5%	1/4W
R257	1-249-441-11	CARBON	100K	5%	1/4W
R258	1-249-393-11	CARBON	10	5%	1/4W
R301	1-249-429-11	CARBON	10K	5%	1/4W
R302	1-249-441-11	CARBON	100K	5%	1/4W
R303	1-249-425-11	CARBON	4.7K	5%	1/4W
R304	1-249-429-11	CARBON	10K	5%	1/4W
R305	1-249-429-11	CARBON	10K	5%	1/4W
R306	1-249-441-11	CARBON	100K	5%	1/4W
R307	1-249-405-11	CARBON	100	5%	1/4W
R308	1-249-429-11	CARBON	10K	5%	1/4W
R309	1-249-417-11	CARBON	1K	5%	1/4W
R310	1-249-429-11	CARBON	10K	5%	1/4W

RV101	1-228-993-00	RES, ADJ, CARBON 4.7K
RV102	1-228-995-00	RES, ADJ, CARBON 22K
RV103	1-228-995-00	RES, ADJ, CARBON 22K
S301	1-554-303-21	SWITCH, KEY BOARD (1)
S302	1-554-303-21	SWITCH, KEY BOARD (2)
S303	1-554-303-21	SWITCH, KEY BOARD (3)
S304	1-554-303-21	SWITCH, KEY BOARD (4)
S305	1-554-303-21	SWITCH, KEY BOARD (5)
S306	1-554-303-21	SWITCH, KEY BOARD (6)
S307	1-554-303-21	SWITCH, KEY BOARD (7)
S308	1-554-303-21	SWITCH, KEY BOARD (8)
S309	1-554-303-21	SWITCH, KEY BOARD (9)
S310	1-554-303-21	SWITCH, KEY BOARD (10)
S311	1-554-303-21	SWITCH, KEY BOARD (11)
S312	1-554-303-21	SWITCH, KEY BOARD (12)
S313	1-554-303-21	SWITCH, KEY BOARD (+)
S314	1-554-303-21	SWITCH, KEY BOARD (−)
S315	1-554-303-21	SWITCH, KEY BOARD (MEMO)
S316	1-554-303-21	SWITCH, KEY BOARD (MS)
S317	1-554-303-21	SWITCH, KEY BOARD (AUTO/MANU, MODE)
S318	1-554-303-21	SWITCH, KEY BOARD (BAND)
T251	1-404-788-11	TRANSFORMER, DISCRIMINATOR(FM)
T252	1-404-713-11	TRANSFORMER, IF
TM101	*1-537-138-21	TERMINAL BOARD (ANT)
TP101	*1-560-060-00	PIN, CONNECTOR 2P
XT201	1-567-767-11	VIBRATOR, CRYSTAL

ACCESSORIES AND PACKING MATERIALS

Part No.	Description
3-312-970-00	SHEET PROTECTION

9-953-118-11

Sony Corporation
Audio Group

English
88B0455-1
Printed in Japan
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Published by A/V Engineering Service Dept.

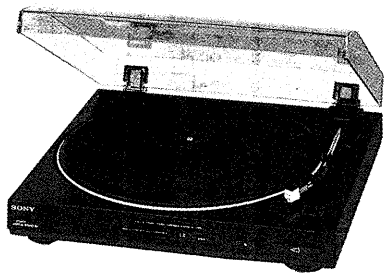
PS-LX60/LX60P

SERVICE MANUAL
REVISED

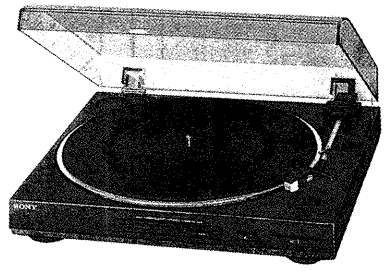
AEP Model
E Model
PS-LX60

UK Model
E Model
PS-LX60P

PS-LX60



PS-LX60P



- PS-LX60 is the turntable system in XO-D10, D20, D40, D50, and D70.
- PS-LX60P is the turntable system in XO-D50 and D70.

SPECIFICATIONS

Turntable

Platter	30 cm (12 in.)
Motor	DC servo motor
Drive system	Belt drive
Speed	33⅓ rpm/45 rpm switchable
Wow and flutter	0.15% (WRMS)
Signal-to-noise ratio	65 dB (DIN-B)
Automatic system	Return, reject, lead in.

Tonearm

Type	Statically balanced
Pivot-to stylus length	206 mm (7⅞ in.)
Overall arm length	235 mm (9⅜ in.)

Cartridge

Type	Moving magnet type
Frequency response	20 Hz – 16 kHz
Stylus	ND-155G

General

Dimensions	355 × 100 × 340 mm (w/h/d) (14 × 4 × 13½ inches)
Weight	Approx. 2.6 kg (4 lb 14 oz)
Power requirements	The model for Europe: 220 V AC, 50/60 Hz The model for other countries: 110 – 120 V, 220 – 240 V adjustable, 50/60 Hz
Power consumption	The model for Europe: 2 W The model for other countries : 4 W
Accessory supplied	45-rpm adaptor (1)

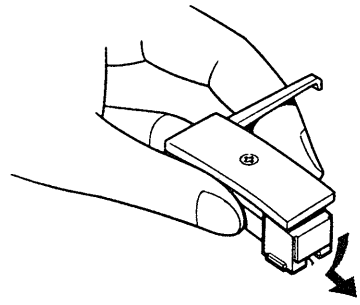
Note for Cartridge

Be careful not to use any cartridge except for specified one (Part No.: 1-549-135-11) as balance weight of pick up arm assy is fixed.

REPLACING THE STYLUS

Replace the stylus after about 400 hours of use because using a worn stylus will damage records.
An ND-155G replacement stylus is available at your Sony dealer.
Be sure to turn the amplifier off before proceeding with replacement.

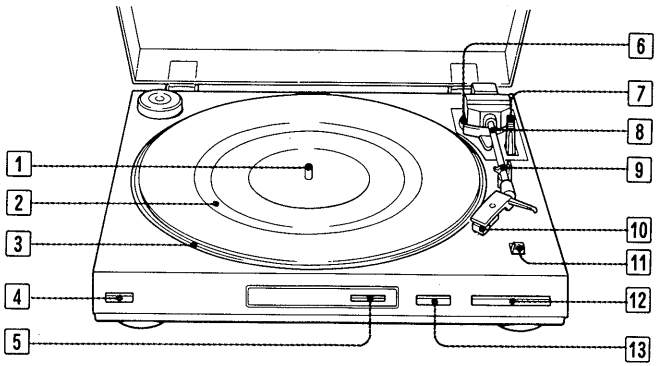
1 While holding the cartridge, detach the stylus assembly as illustrated.
2 Insert the new stylus into the cartridge.



STEREO TURNTABLE SYSTEM

SONY®

LOCATION AND FUNCTION OF CONTROLS



1 Center spindle

2 Rubber mat

3 Turntable platter

4 POWER switch (PS-LX60 only)

5 SPEED select button
Allows selection of 45 rpm or 33 rpm turntable speed.

6 Drop point adjustment hole

7 Cueing lever (▼/▼)

8 Tonearm

9 Arm rest

10 Cartridge

11 SIZE SELECTOR
Allows selection of 17 cm (7 inch) or 30 cm (12 inch) records.

12 ◁(start) button

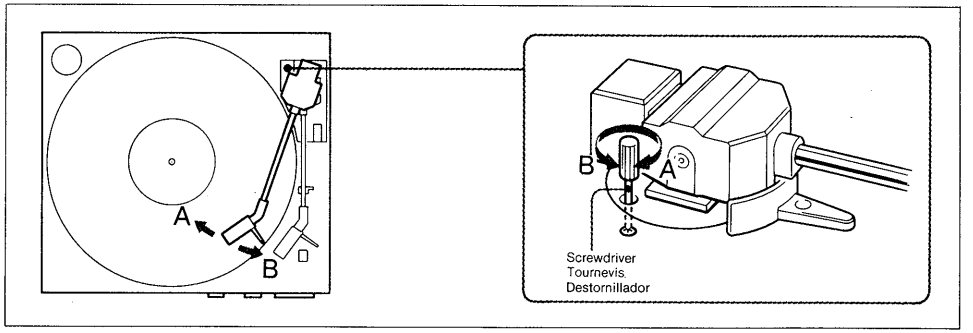
13 ■ (stop) button

TONEARM DROP-POINT ADJUSTMENT

The tonearm drop-point during auto play has been factory-adjusted. If necessary, readjust it as follows.

To move the drop-point toward A, turn the adjustment screw clockwise with a screwdriver.
To move the drop-point toward B, turn the adjustment screw counterclockwise with a screwdriver.

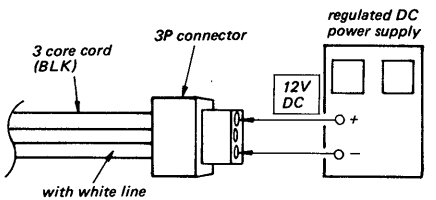
If the tonearm does not return to the arm rest automatically after play
Turn the adjustment screw counterclockwise.



REPAIRING PRECAUTION (PS-LX60P only)

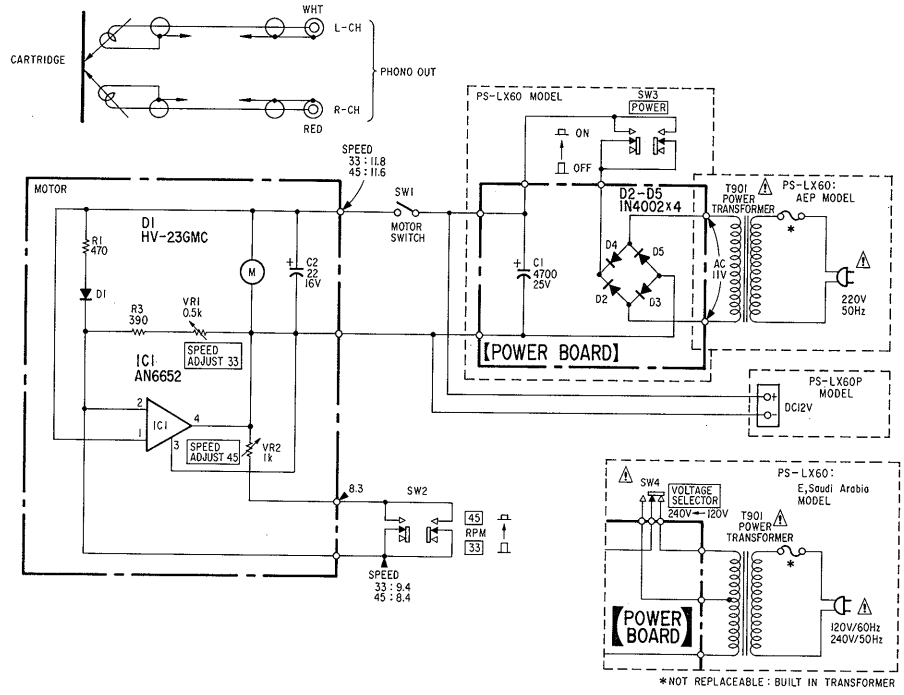
[To supply B+ voltage]

The power of this unit is fed from DXA-D50E. Because of this, connect the regulated DC power supply as illustrated right when this unit alone operates.



SECTION 2
DIAGRAMS

2-1. SCHEMATIC DIAGRAM



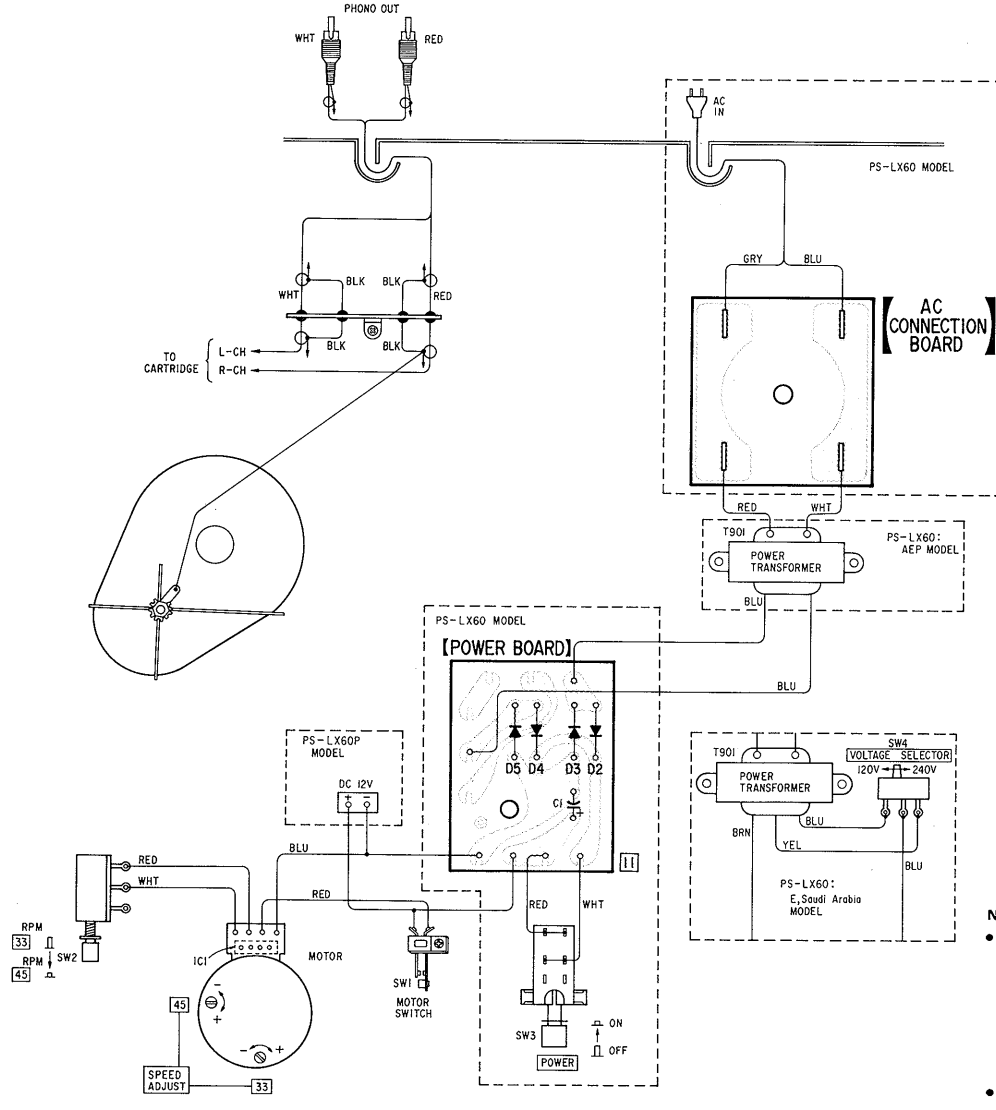
Note:

- All capacitors are in μF unless otherwise noted. pF: μμF 50WV or less are not indicated except for electrolytics and tantalums.
- All resistors are in Ω and 1/4W or less unless otherwise specified.
- Switches:

Ref. No.	Switch	Position
SW1	MOTOR	OFF
SW2	SPEED	33
SW3	POWER	OFF
SW4	VOLTAGE SELECTOR	120V

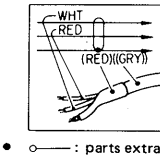
Note: The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety. Replace only with part number specified.

2-2. WIRING DIAGRAM



Note:

- Color code of sleeving over the end of the jacket.



- ○—— : parts extracted from the component side.

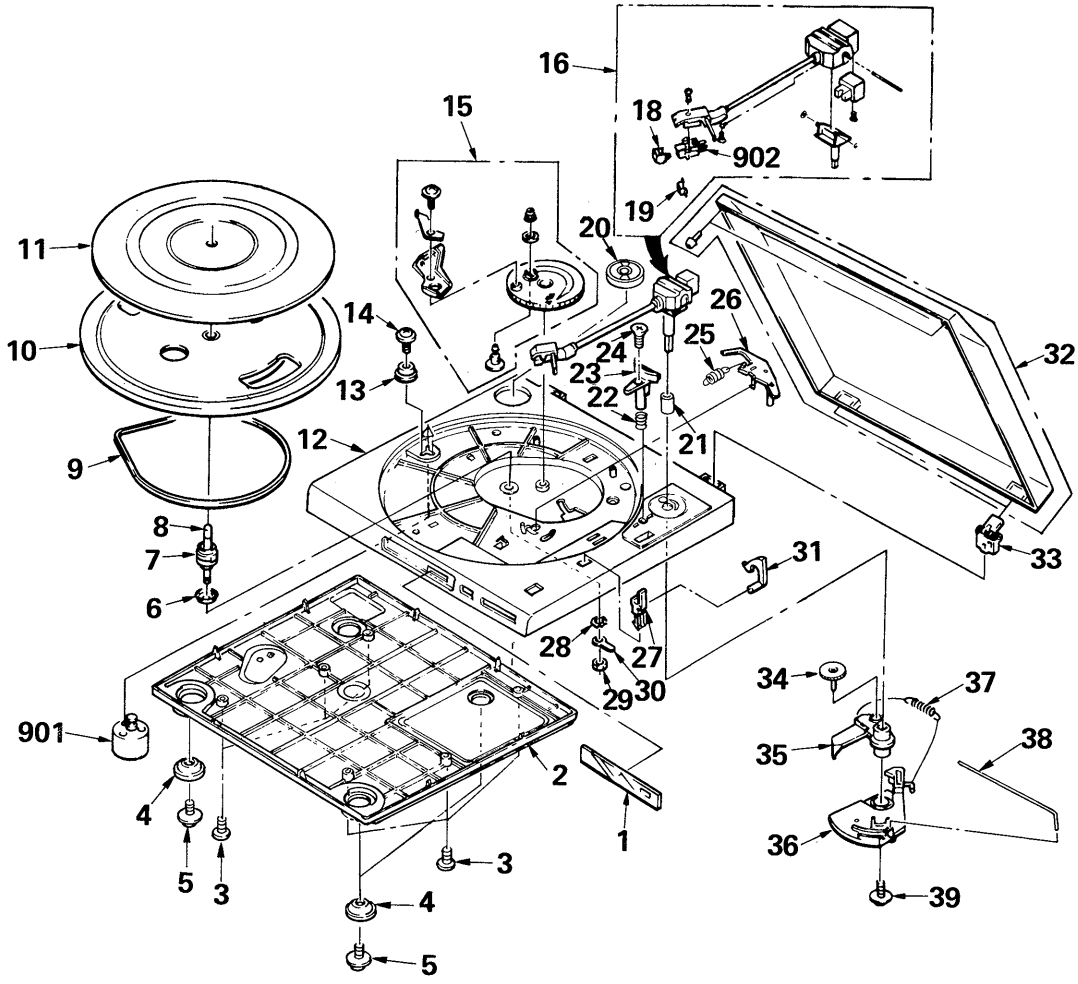
SECTION 3 REVISED
EXPLODED VIEWS

NOTE:

- The mechanical parts with no reference number in the exploded views are not supplied.
- The construction parts of an assembled part are indicated with a collation number in the remark column.
- Items marked "★" are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.
- Due to standardization, parts with part number suffix -XX and -X may be different from the parts specified in the components used on the set.
- Color Indication of Appearance Parts
  Example:
  (RED) . . . KNOB, BALANCE (WHITE)
  ↑ ↑
  Cabinet's Color Parts Color

The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety.
Replace only with part number specified.

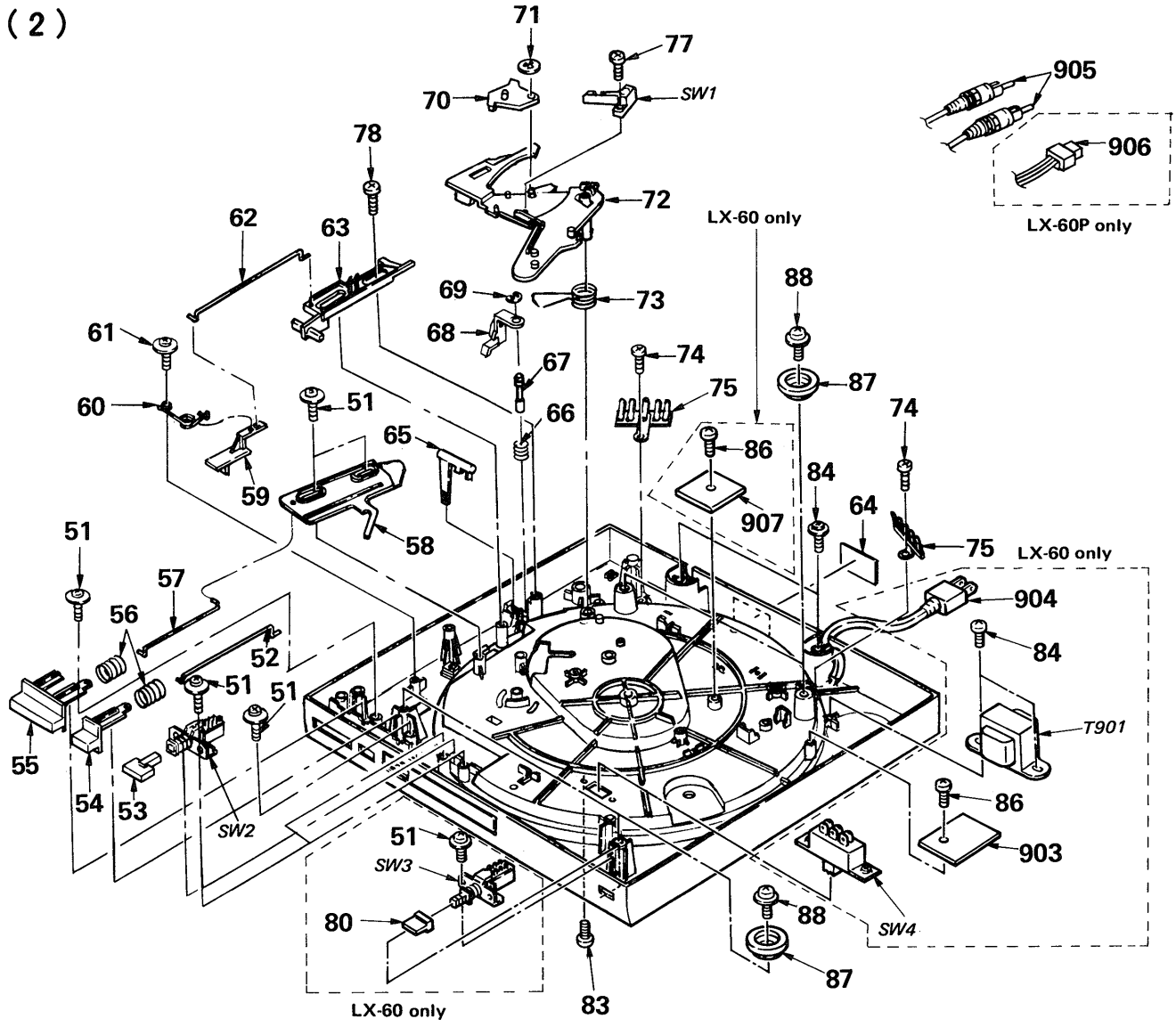
(1)



No.	Part No.	Decsription	Remarks
1	4-896-209-01	PANEL, FRONT	
2	*4-896-217-01	(BLACK)...BOARD, BOTTOM	
	4-896-217-01	(GRAY)...BOARD, BOTTOM	
	4-896-289-01	(WHITE)...BOARD, BOTTOM	
3	4-896-246-01	SCREW (7-BID 3010 ZN3A)	
4	4-895-435-01	FOOT	
5	4-895-430-01	SCREW (7-BID 3008 ZN3A 12D)	
6	4-896-210-01	WASHER	
7	4-896-233-01	GEAR, T/T	
8	4-896-232-01	SPINDLE	
9	4-880-655-01	BELT	
10	4-896-333-01	TURNTABLE	
11	4-896-334-01	TURNTABLE	
12	4-928-255-01	(BLACK).....CABINET	
	4-896-288-01	(LX60P: WHITE)....CABINET	
	4-928-253-01	(LX60: WHITE)....CABINET	
	4-928-256-01	(LX60: GRAY)....CABINET	
	4-928-254-01	(LX60P: GRAY)....CABINET	
13	4-895-414-01	GROMMET (A)	
14	4-895-413-01	SCREW	
15	X-4895-409-1	GEAR ASSY, CAM	
16	X-4895-410-1	ARM ASSY	
18	4-896-234-01	BEAM	
19	4-896-235-01	COVER, BEAM	

No.	Part No.	Decsription	Remarks
20	3-701-806-00	ADAPTOR, 45	
21	*4-896-265-01	SHAFT, P.U	
22	4-896-267-01	SPRING (A)	
23	4-896-258-01	PLATFORM, LIFT	
24	4-896-259-01	SCREW (1-FLAT 2612 ZN3K)	
25	4-896-262-01	SPRING	
26	4-896-260-01	LEVER, REJECT	
27	4-895-417-01	P.U. REST	
28	4-895-443-01	W GEAR 0003 ZN3A	
29	4-895-445-01	NUT 50 ZN3A	
30	4-896-239-01	TERMINAL, GROUND	
31	4-895-418-01	P.U. TUBE HOOK	
32	A-4620-041-A	COVER ASSY, DUST	
33	4-895-410-01	HINGE ASSY	
34	4-895-458-01	ADJUST CAM	
35	4-896-223-01	LINK (A), RETURN	
36	4-896-224-01	LINK (B), RETURN	
37	4-895-460-01	ADJUST SPRING	
38	*4-896-264-01	ROD, TRIP	
39	4-896-249-01	SCREW (7-BID 3014 ZN3A 12D)	
901	1-541-568-11	MOTOR	
902	1-549-135-11	CARTRIDGE	
903	1-626-640-11	(LX60)...PC BOARD, POWER	

(2)



No.	Part No.	Decsription	Remarks
51	4-895-879-01	SCREW (7-BID 3008 ZN3A 10D)	
52	4-896-261-01	WIRE, REJECT	
53	4-896-241-01	(BLACK)... BUTTON, SPEED	
	4-896-241-11	(GRAY) ... BUTTON, SPEED	
	4-896-290-01	(WHITE)... BUTTON, SPEED	
54	4-896-240-01	(BLACK)... BUTTON, STOP	
	4-896-240-11	(GRAY) ... BUTTON, STOP	
	4-896-291-01	(WHITE)... BUTTON, STOP	
55	4-896-242-01	(BLACK)... BUTTON, START	
	4-896-242-11	(GRAY) ... BUTTON, START	
	4-896-292-01	(WHITE)... BUTTON, START	
56	4-896-255-01	SPRING	
57	4-896-216-01	WIRE, CONTROL ARM	
58	4-896-215-01	LEVER, CONTROL	
59	4-896-243-01	KNOB, SPEED	
60	4-896-244-01	SPRING	
61	4-896-245-01	SCREW (7-CUP 3008 ZN3A 10D)	
62	*4-896-213-01	WIRE, SELECTOR	
63	4-896-214-01	SELECTOR, SIZE	
64	*4-896-208-01	LABEL, MODEL NUMBER (ALL)	
65	4-896-212-01	LEVER, CUE	
66	4-896-251-01	SPRING (B)	
67	4-896-252-01	SHAFT, ARM LIFT	
68	4-896-253-01	FORK, LIFT	
69	4-896-254-01	RING (DIA.3), E	
70	4-896-248-01	CAM	
71	4-303-605-00	PUSH NUT DIA.3	
72	4-896-218-01	ARM, CONTROL	

No.	Part No.	Decsription	Remarks
73	4-896-247-01	SPRING	
74	4-896-263-01	SCREW (7-BID 3008 ZN3A)	
75	*4-895-423-01	LUG TERMINAL	
76	4-896-256-01	SCREW ASSY	
77	7-685-104-19	SCREW (7-PAN 2006 ZN3A)	
78	7-685-649-79	SCREW (7-BID 3016 ZN3A)	
80	4-895-896-01	(LX60)... BUTTON, POWER	
83	7-621-775-20	2-BID 2605 ZN3A	
84	4-895-430-01	SCREW (7-BID 3008 ZN3A 12D)	
86	7-685-647-79	SCREW +P 3X10 TYPA N-S	
87	4-895-435-01	FOOT	
88	7-685-646-79	SCREW (7-BID ZN3A 12D)	
903	1-626-640-11	(LX60)... PC BOARD, POWER	
904	⚠1-551-908-11	(LX60: AEP, Saudi Arabia) ...CORD, POWER, EULO PLUG	
	⚠1-551-188-XX	(LX60: E)...CORD, POWER	
905	1-558-595-11	CORD, CONNECTION	
906	1-558-596-11	(LX60P)... CORD, CONNECTION (3 CORE)	
907	4-896-337-01	(LX60).... PC BOARD, AC CONNECTION	
SW1	1-570-666-11	SWITCH, LEAF	
SW2	1-571-419-11	SWITCH, PUSH (1KEY)	
SW3	1-571-560-11	(LX60)...SWITCH, PUSH (1 KEY)	
SW4	⚠1-571-088-11	(LX60: E, Saudi Arabia) ... SWITCH, SLIDE	
T901	⚠1-449-290-11	(LX60: AEP) .....TRANSFORMER, POWER	
T901	⚠1-449-291-11	(LX60: E, Saudi Arabia). .TRANSFORMER, POWER	

REVISED

SECTION 4
ELECTRICAL PARTS LIST

NOTE:

- Due to standardization, replacements in the parts list may be different from the parts specified in the diagrams or the components used on the set.
- Items marked "★" are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.
- If there are two or more same circuits in a set such as a stereophonic machine, only typical circuit parts may be indicated and capacitors and resistors in other same circuits may be omitted.

CAPACITORS:
MF: μF, PF: μμF.

RESISTORS
- All resistors are in ohms.
- F: nonflammable

COILS
- MMH: mH, UH: μH

SEMICONDUCTORS
In each case, U: μ, for example:
UA...: μA..., UPA...: μPA...,
UPC...: μPC, UPD...: μPD...

The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety.
Replace only with part number specified.

Ref. No.	Part No.	Description
901	1-541-568-11	MOTOR
902	1-549-135-11	CARTRIDGE
903	1-626-640-11	(LX60) ... PC BOARD, POWER
904	⚠1-555-795-00	(LX60: AEP, West Germany, Saudi Arabia) ..... CORD, POWER, EULO PLUG
	⚠1-551-188-XX	(LX60: E) ... CORD, POWER
905	1-558-595-11	CORD, CONNECTION
906	1-558-596-11	(LX60P) ... CORD, CONNECTION (3 CORE)
907	4-896-337-01	(LX60) .... PC BOARD, AC CONNECTION
C1	1-123-336-00	ELECT 470 20% 25V
D2	8-719-200-02	(LX60) ... DIODE 10E2
D3	8-719-200-02	(LX60) ... DIODE 10E2
D4	8-719-200-02	(LX60) ... DIODE 10E2
D5	8-719-200-02	(LX60) ... DIODE 10E2
SW1	1-570-666-11	SWITCH, LEAF
SW2	1-571-419-11	SWITCH, PUSH (1 KEY)
SW3	1-571-560-11	(LX60) ... SWITCH, PUSH (1 KEY)
SW4	⚠1-571-088-11	(LX60: E, Saudi Arabia) ... SWITCH, SLIDE
T901	⚠1-449-291-11	(LX60: E, Saudi Arabia) ... TRANSFORMER, POWER
T901	⚠1-449-290-11	(LX60: AEP, West Germany) ... TRANSFORMER, POWER

ACCESSORY & PACKING MATERIAL

4-896-206-01	(LX60: West Germany) ... INDIVIDUAL CARTON
4-896-336-01	(LX60: AEP, E Saudi Arabia) ... INDIVIDUAL CARTON
3-701-806-00	ADAPTOR, 45
3-769-871-12	(LX60: AEP, E, Saudi Arabia) ... MANUAL, INSTRUCTION
3-769-871-41	(LX60: AEP, West Germany) ... MANUAL, INSTRUCTION
4-895-483-01	SLEEVE, DUST COVER

9-953-173-13
(Including 9-953-173-91, 92)

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